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THE UNIVERSITY OF ALBERTA

THE USE OF METAPHOR IN EDUCATION AND THERAPY WITH CHILDREN

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH

IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF

MASTER OF EDUCATION

IN

COUNSELLING PSYCHOLOGY

DEPARTMENT OF EDUCATIONAL PSYCHOLOGY

EDMONTON, ALBERTA

SPRING, 1988

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THE UNIVERSITY OF ALBERTA

FACULTY OF GRADUATE STUDIES AND RESEARCH

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research for acceptance, a thesis entitled The Use of Metaphor in Education and Therapy With Children submitted by Gwen Randall-Young in partial fulfillment of the requirements for the degree of Master of Education in Counselling Psychology.

JB Paterson

Supervisor

L Stewin

Janis Blakey

Date: April/88

DEDICATION

This work is dedicated to my parents, who understand that grown children still need nurturing sometimes; to my children Jordy, Jessalyn and Tasha, who never stop teaching me; and to my husband Winston, who shares my struggles, and my joys.

Abstract

In the past decade there has been a tremendous amount of research generated in various disciplines relating to brain functioning and thinking. Despite the development and incorporation in schools of various types of programs designed to utilize the "whole brain", there has yet to emerge from this research a widely accepted, integrated theory that might guide parents and educators in supporting the development of children.

Growing numbers of children are being diagnosed as having "problems" in the school setting, and often therapeutic interventions are aimed at assisting children to "adjust" to their situation.

Some writers and researchers are beginning to suggest that parents, teachers, counsellors and therapists, should be working towards adjusting themselves and the environments that they create for children to align more positively with the natural development of the child.

The purpose of this study was to investigate the research findings and the literature in the areas of brain functioning, child development, learning and therapy, to see if common themes were emerging. What was found was that the concept of metaphorical thinking, involving connection making through associations and analogies, was recurring in all of the areas investigated. Some writers suggested that metaphor might be *the* integrating principle in thinking and development. Yet there was very little research focusing on the use of metaphor in learning or therapy with children. The central focus of the investigation was thus directed towards investigating the research in the various areas indicated, to see if there was sufficient basis for developing a rationale for the use of metaphor in education and therapy with children. Results of the study supported this use of metaphor, and practical applications in the areas of learning and therapy were explored.

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Finally, but nonetheless very special, is the gratitude I feel for all of the little children with whom I have worked over the years, as they opened their hearts and allowed me to share a little of their journey.

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I. Introduction

A. Purpose

The purpose of this study was to investigate the literature and research in relation to the role of metaphor in children's thinking and development, with specific applications to learning and therapy. This involved research in areas of brain functioning, child development and learning, as well as education and therapy. While the scope initially appears to be very broad, the intent was to extract from the related, yet diverse areas in the literature and the research in such a way that a rationale for the use of metaphor in learning and therapy could be presented.

B. Significance of the Study

The significance of the study lies in the author's belief that there is a need to rethink the way that learning experiences are structured for children. Gregory Bateson (1979) suggests that the presupposition or premises of thought upon which our teaching is based are ancient and obsolete. He refers to notions such as:

> a. The Cartesian dualism separating "mind" and "matter".
> b. The strange physicalism of the metaphors which we use to describe and explain mental phenomena - "power", "tension", "energy", "social forces", etc.
> c. Our anti-aesthetic assumption, borrowed from the emphasis which Bacon, Locke, and Newton long ago gave to the physical sciences viz. that all phenomena (including mental) can and shall be studied and *evaluated* in quantitative terms. (p.240)

Bateson argues that logic and quantity are inappropriate devices for describing organisms and their interactions and internal organization.

Further, emphasis in teaching should be on the patterns which connect all living things. Children should be taught that the way to define something is in relation to other things, and that all communciation necessitates context: there is no meaning without context. Bateson emphasizes synthesis, fundamental unities and the patterns that underlie the apparent diversity of living things.

The practical and very real problem is how to initiate change in an educational system, in which the educators themselves are products of traditional (Bateson would say obsolete) methods of teaching. How can the new knowledge from the sciences be integrated in a way that will equip children to do the kind of thinking and problem solving that will be required in the 21st century? How can this be done within an educational context which has changed very little in the past century, in relation to the massive societal and technological changes?

The central proposal in this thesis is that metaphor is a powerful integrating principle. The brain has been conceptualized as having two distinctly different functions representative of left and right hemispheric processes. Perception results from the way input is interpreted. Most of the thinking that is encouraged in schools is 'one dimensional,' focusing on logical, verbal, analytical processes. Metaphor calls forth the other dimensions of thinking. It utilizes the whole brain and gives access to larger ecologies of thought. In the context of therapy, metaphor theory holds that therapeutic metaphor connects disparate parts of the individual, or connects the individual with inner resources, so that reintegration occurs at a higher level (Gordon, 1978; Grinder and Bandler, 1981; Lankton and Lankton, 1983; Samples, 1976, 1977).

Writers and researchers from diverse fields suggest that society and our method of schooling separates parts of humans, disconnecting thought from feeling, intuition from reason (Bateson, 1979; Ornstein, 1972; Pearce, 1980; Samples, 1976; Watzlawick, 1978. There is a need to find ways to enhance the integration of human nature. Metaphor is a key to this process, as it draws together more than what has been given. It connects the verbal with the nonverbal, the analytic with the synthetic; its impact is both understood and felt (Gordon and Poze, 1979).

In focusing on the importance of metaphor in learning, this is not so much a description of something that is new, or a conceptualization of something that is "applied" to the learning process. Rather, it is more likely a shedding of "new light" on something that is very old. Old in the sense, perhaps, of having been there all along, having been the way the mind-brain was intended to function from the beginning. It is only the recognition that is new.

C. Metaphor Defined

There are many different definitions of metaphor, and definitions vary according to the context. Essentially, metaphor is an implied comparison between two different things; a figure of speech in which a word or phrase that ordinarily means one thing is applied to another thing in order to suggest a likeness between the two. For the purposes of this thesis, broad defintions suffice, as concern is with the process of using metaphor rather than with the particular metaphors. Thus metaphor is not distinguished from other figures of speech as would have been the case if the concern was literary theory or criticism.

Metaphor is considered in two contexts: the learning process, and the therapeutic process. William Gordon and Tony Poze (1979), originators of

Synectics theory and practice, describe metaphoric learning as connection making through associations and analogies. They suggest that this is a powerful way of knowing as it draws upon the right brain's natural tendency to synthesize and make corrections analogically. It also helps students internalize the external world and express it in their own terms. Williams (1983) also suggests that inner imagery and metaphor serve as "mechanisms by which the result of nonverbal thought is offered to verbal consciousness" (p.6).

Therapeutic metaphors may take the form of fairytales, parables or anecdotes. Sheldon Kopp (1971) conceives of metaphor as a wide ranging source of "new light" on old concerns. Bettelheim (1975) writes about the therapeutic value of fairy tales:

> The fairy tale is therapeutic because the patient finds his own solutions, through contemplating what the story seems to imply about him and his inner conflicts at this moment in his life. The content of the chosen tale usually has nothing to do with the patient's external life, but much to do with his inner problems, which seem incomprehensible and hence unsolvable. The fairy tale clearly does not refer to the outer world, although it may begin realistically enough and have everyday features woven into it. The unrealistic nature of these tales (which narrow-minded rationalists object to) is an important device, because it makes obvious that the fairy tales' concern is not useful information about the external world, but the inner processes taking place in the individual (p.25)

David Gordon (1978) proposes that

> the purpose of therapeutic metaphors is to initiate either conscious or unconscious transderivational searches which will assist a person in gaining for himself the personal resources and enhanced world model in order to be able to handle the problem with which he is grappling (p.18)

The transderivational search is the process of going back through our world models in order to make sense out of our experiences. Often the solution may be presented in the metaphor, as was often the case in the therapy of Milton Erickson, who was a master in the field of therapeutic metaphor. Suggestions embedded in metaphors were received at an unconscious level and were, therefore, difficult to resist. Erickson did not interpret the meaning of metaphors to his clients, that is, he did not translate "unconscious" communication into conscious form (Hayley, 1973).

The use of metaphors for learning and therapy is considered in depth in Chapters IV, V and VI of this thesis.

D. Background to the Study

Theories of Consciousness

Psychology has been defined by Robert Ornstein (1972) as, primarily, the science of consciousness:

> Its researchers deal with consciousness directly when possible, and indirectly, through the study of psychology and behavior, when necessary. Psychologists are now returning to the essential questions of our discipline: How does the mind work? What are the major dimensions of human consciousness? Is consciousness individual or cosmic? What means are there to extend human consciousness? These questions have not yet had a full treatment within academic science, having been ruled out of inquiry by the dominant paradigm of the past 60 or so years. (p. xi)

Much has evolved since these words were written by Ornstein in 1972. Certainly the growth of transpersonal psychology constitutes a paradigm shift.

Transpersonal psychology has been defined by Anthony Sutich, in the first issue of the Journal of Transpersonal Psychology (Spring, 1979) as:

> an emerging force in the psychology field by a group of psychologists and professional men and women from other fields who are interested in those *ultimate* human capacities and potentialities that have no systematic place in positivistic or behavioristic theory ("first force"), classical psychoanalytic theory ("second force"), or humanistic psychology ("third force").

Much of the current excitement, and the new perspectives in education and psychology have been generated by researchers and writers in other fields. Three writers were particularly influential for this author in establishing the foundation for thinking about this thesis. Jonas Salk, author of *Survival of the Wisest* (1973), was founder of the Salk Institute for Biological Studies, dedicated to relating biological knowledge to philosophical, psychological, and social questions. Dr. Salk's view of biology extended beyond science: he saw it as a basic cultural discipline with unifying potential for relationships that exist between man and the physical universe, and also between man and the sciences, arts and humanities. Joseph Chilton Pearce, author of *Magical Child* (1980) and *Magical Child Matures* (1986) is a former professor of humanities. Pearce's message synthesizes, in a profound and provocative way, information and knowledge from many diverse and spiritual disciplines. Bob Samples, author of *The Metaphoric Mind* (1976), *The Wholeschool Book* (1977), and *Open Mind/Whole Mind* (1987), was originally trained in the physical sciences of geology and astronomy. He was drawn into education and psychology when invited to contribute to national science curriculum projects. He now lectures throughout the world on education, creativity, brain-mind design, personality/stress and systems theory.

Psychology and education are also experiencing the impact of findings in the neurosciences and physics. Brain research suggests that the two hemispheres of the brain perceive and process information differently, and that these differing perceptions are communicated between hemispheres and reconciled via the communicatons network of the corpus callosum and other connections (Edwards, 1979). While there is currently controversy surrounding the validity of the conclusions drawn from this research, it is important not to miss the most significant contribution of this work. The discoveries and hypotheses about the specialization of the right and left hemishperes, however oversimplified they may appear, have offered education a provocative new metaphor for learning (Ferguson, 1980). Such a paradigm shift constitutes a new way of looking at old problems. As with paradigm changes in any area, we realize that our previous views were only part of the picture, and that what we now know is only part of what we surely will know later. Nowhere is this more evident than in the realm of physics. Newton's mechanical rules simply did not hold at the level of galaxies or electrons. But the new quantum physics does not replace Newtonian physics, rather, it includes it. When our old ways of looking at nature are not comprehensive enough to explain all that we observe, we are forced to develop a more inclusive view (Zukav, 1979). A fundamental difference between the old and new physics is that the old physics assumes an external world which exists apart from us - one that we can observe, measure and speculate about without changing it. The new quantum mechanics, on the other hand, clearly states that it is not possible to observe reality without changing it. There is no such thing as objectivity. Zukav writes:

> We are a part of nature, and when we study nature there is no way around the fact that nature is studying itself. Physics has become a branch of psychology, or perhaps the other way around. (p.31)

He quotes Carl Jung:

> The psychological rule says that when an inner situation is not made conscious, it happens outside, as fate. That is to say, when the individual remains undivided and does not become aware of inner contradictions, the world must perforce act out the conflict and be torn into opposite halves. (p. 31)

and Nobel prize-winning physicist, Wolfgang Pauli:

> From an inner center the psyche seems to move outward, in the sense of an extraversion, into the physical world....

concluding that "if these men are correct, then physics is the study of consciousness" (p. 31). This thought is elaborated by Keith Floyd when he suggests that contrary to general thinking, it may not be the brain that produces consciousness, but rather, conversely, consciousness that creates the appearance of brain, as well as matter, space, time and everything else we interpret as the physical universe (Ferguson, 1980). The suggestion is that mind creates reality, and that tapping the holistic perceptual capabilities of the right hemisphere may be the pathway to a more inclusive understanding of ourselves and the world.

Karl Pribram, Stanford neuroscientist, proposed an all encompassing paradigm linking brain research to theoretical physics, based on holographic theory. Holograms are a kind of 3-D photography using laser beams. The entire image produced in this process can be reconstructed from any fragment of the hologram. Experiments revealed one sense in which the brain was like a hologram. Memory was not found to reside in specific parts of the brain, but rather seemed to be distributed throughout (Lashley, in Fegruson 1980). Pribram saw the hologram as a model of how the brain might store memory, suggesting that the brain deals in interactions, interpreting bioelectric frequencies throughout the brain, with the whole code existing at every point in the medium (Ferguson p. 179). The brain may be a hologram of the larger world hologram.

David Bohm considers the universe to be an infinite hologram (Omni, Jan. 1987). Our minds, he suggests, relying on human perception, see only fragments of reality. He argues that the nature of things is not reducible to fragments or particles, and advocates a holistic view of the universe: we must learn to regard matter and life as a whole, coherent domain which he terms the implicate order. Another of his key concepts is that of enfoldment. He explains enfoldment as what we see when we fold up a sheet of paper, turn it into a small packet, and then make cuts in it. When unfolded there is a pattern, with the parts that were close in the cuts now far away. This is similar to what happens in a hologram. Bohm discusses the movement of all matter in terms of this folding and unfolding, which he calls holomovement. While classical physics views reality as little particles that separate the world into its independent elements, Bohm proposes the reverse: that these particles are abstractions from the fundamental reality, which is the enfoldment and unfoldment. Everything emerges by unfoldment from the holomovement (explicating), then enfolds back into the implicate order (implicating). "The implicate and explicate together are a flowing, undivided wholeness. Every part of the universe is related to every other part, but in different degrees."(p.72). What Bohm says about consciousness is central to this thesis:

> Much of our experience suggests that the implicate order is natural for understanding consciousness. When you are talking to somebody,your whole intention to speak enfolds a large number of words. You don't choose them one by one. There are any number of examples of the implicate order in our experience of consciousness. Any one word has behind it a whole range of meaning enfolded in thought.
>
> Consciousness is unfolded in each individual, but any

> abstract level depends on language, which is social. The word, which is outside, evokes the meaning, which is inside each person.
>
> Meaning is the bridge between consciousness and matter..... meaning enfolds the whole world into me, and vice versa - that enfolded meaning is unfolded as action, through my body, and then through the world (p. 74).

In summary, holographic theory says that our brains mathematically construct "hard" reality through interpreting frequencies from a dimension that transcends time and space. The brain is conceptualized as a hologram interpreting a holographic universe (Ferguson, 1980).

Theories of Change

Scientific insights from the neurosciences and physics raise some questions about the scientific method itself. Just as Newtonian physics is still applicable to the large scale world, but does not work in the subatomic realm, so the scientific method works well in traditional realms of thinking. But wholes cannot always be understood by analysis, and often are more than the sum of their parts. In looking at consciousness, as we have thus far in this chapter, we are really engaging in a qualitative shift. Ferguson (1980) suggests that in all scientific breakthroughs we discover qualitative shifts. Further, she argues that in this area we have been poking at qualities with tools which were designed to measure quantities. (I.Q. tests, for example.) She concludes that:

> We cannot quantify relationship, connectedness, transformation. Nothing in the scientific method can cope with the richness and complexity of qualitative shifts ." (p. 175)

This change in focus can be understood in terms of Whitehead and Russel's Theory of Logical Types as developed in their *Principia Mathematica* and described in Watzlawick, Weakland and Fisch (1974). Two important conclusions are drawn from this theory:

1) logical levels must be kept strictly apart to prevent paradox and confusion, and 2) going from one level to the next higher (i.e. from member to class) entails a shift, a jump, a discontinuity or transformation- in a word, a change of the greatest theoretical....and practical importance, for it provides a way out of a system (p. 10). Using Group theory, which provides a framework for thinking about the kind of change that can occur within a system which itself remains invariant, and the Theory of Logical Types, which provides a framework for considering the relationship between a member and a class, and the "peculiar metamorphosis which is in the nature of shifts from one logical level to the next higher one", Watzlawick, Weakland and Fisch (1974) postulate two types of change: first order change, which occurs within a system that remains, itself, unchanged; and second order change, the occurrence of which changes the system itself. Watzlawick et al. (1974) remind us that:

> second order change is always in the nature of a discontinuity or a logical jump: we may expect the practical manifestations of second order change to appear .... illogical and paradoxical. (p.12)

The theories of consciousness and change outlined here served as a starting point for this investigation in the form of the questions, "What is consciousness and how is meaning acquired and communicated?" and "On what basis can one depart from traditional theories of development and thinking in children, to explore broader conceptualizations?"

E. Delimitations

The purpose of the study was to investigate the literature and research in the area of brain functioning, and to relate those findings to research and theories in related areas of child development to see what useful applications can be drawn for learning and counselling in the elementary school setting. Given the goals of guidance and counselling services as described in Alberta Education Manual on Guidance and Counselling in Alberta Schools (1984), clearly this is a very broad base of application:

> The following goals of guidance and counselling services are consistent with the provincially adopted *Goals of Education and Schooling:*
>
> * To assist students to relate effectively to, and with, others.
> * To assist students to maximize their academic potential.
> * To assist students to acquire the knowledge, skills, attitudes and habits required to respond to the opportunities and expectations of the world of work.
> * To assist students to cope more effectively with personal problems which impede educational achievement, career development and personal/social growth.
> * To request the assistance of teachers, administrators and parents in the identification of personal, social and intellectual needs of students.
> * To provide information regarding available educational and treatment services for exceptional students.
>
> Alberta Education views guidance and counselling as a service that should be provided to all students in three broad areas, namely, educational, career and personal/social. Every Alberta student has the right to guidance and counselling services that are needed to :
>
> * make effective educational and career plans;
> * develop the skills and competencies necessary to lead productive and satisfying lives.
>
> (p. viii-ix)

General applications were explored as part of the investigation into what brain research suggests about children's learning, but the heart of the thesis is the focus on metaphor as meaning: as a bridge between consciousness and matter; between what is inside the person, and what is outside. The primary applications relate to the use of metaphor in therapeutic situations with children.

No attempt was made, in this thesis, to establish the scientific validity of the theories of brain functioning and consciousness. Rather, the theories presented serve as *models*. Applications are consistent with those models, which provide a framework for looking at children's thinking. Ways of working with children *in light of* current research on brain functioning and learning, are suggested.

F. Limitations

Conceptualizing consciousness in a way quite different from the traditional psychological interpretations involves a qualitative shift or a second-order change. Herein lies a fundamental limitation of this thesis. An attempt has been made to step back and look at the brain-mind system from the outside. But this may be like expecting that a computer can view its processes objectively. It may be that the most that could have been achieved was to develop a broader, more inclusive perspective. It is not possible, at this point, to provide scientific verification for these theories. That kind of verification, as with Newton's Laws, may never be possible for certain aspects of consciousness. This does not negate the importance of the theorizing. David Bohm is currently attempting to develop a precise testable mathmatical version of his implicate order hypothesis that other physicists will take seriously. As yet he has not found an experimental aspect that could support his ideas in a way that Einstein could support his theory of relativity. But this is the way of all explorers who set out to chart unknown territory. Ferguson (1980) suggests that researchers are approaching a new unity - "a non-totalitarian science in which we don't try to reduce one level to another" (p.167). Biologist Lyle Watson (Ferguson, 1980, p.

156) encapsulates the catch-22 of brain research: "If the brain were so simple we could understand it, *we* would be so simple we couldn't!"

G. Organization of the Study

Chapter I has consisted of an introduction to the thesis topic, as well as a discussion of the limitations and parameters of the thesis. Chapter II contains the philosophical background, establishing the theoretical orientation of the study. Chapter III consists of a review of the recent research on brain functioning, the hemisphericity model, and development. Chapter IV contains a more detailed analytical treatment of metaphor, and an exploration of its relation to learning and understanding. Chapter V consists of some applications of metaphorical thinking in formal education. In Chapter VI, the focus is on the role of metaphor as a time-honored form of communication, and its use in psychology and therapy. Chapter VII contains a comprehensive review of a variety of applications of metaphor specifically in the context of counselling and therapy with children. In Chapter VIII, a summary, discussion and recommendations for further research are presented.

II. Philosophical Background and Theoretical Orientation

A. Mind and Development

In this chapter the argument is developed that traditional education has fragmented knowledge of the world, and the child's knowledge of self. It may be that children who are referred for counselling in schools are in some way disconnected from the educational process in which they are held, and perhaps disconnected from parts of themselves. With an holistic approach to education, and to the child, many school problems may no longer exist, or would not be defined as problems. Counselling would be directed to enhancing the natural growth process of all children, rather than providing support to those who, for whatever reason, are having difficulty accommodating to the schooling process.

The works of three authors are considered: Bob Samples, *The Metaphoric Mind* (1976), Joseph Chilton Pearce, *The Magical Child* (1980), and Jonas Salk, *Survival of the Wisest* (1973). These three were chosen as they set the stage for an inquiry into the research on hemisphericity theory and its validity. The works also pose fundamental questions as to the development of the human mind in evolutionary terms and suggest that traditional educational practices may be counter -productive to the full development of human potential. New ways of viewing human development and education are advocated.

Recently there has been much written about hemisphericity theory: the theory that holds that the left and right hemispheres of the human brain perceive and function differently. Robert Ornstein, in *The Psychology of Consciousness* (1972), has compared the characteristics of the two modes of knowing:

Who Proposed It:

Many sources	Day	Night
Blackburn	Intellectual	Sensuous
Oppenheimer	Time,History	Eternity, Timelessness
Deikman	Active	Receptive
Polanyi	Explicit	Tacit
Levy, Sperry	Analytic	Gestalt
Domhoff	Right (side of body)	Left (side of body)
Many sources	Left hemisphere	Right hemisphere
Bogen	Propositional	Appositional
Lee	Lineal	Nonlineal
Luria	Sequential	Simultaneous
Semmes	Focal	Diffuse
I Ching	The Creative: heaven	The Receptive: earth
	masculine, Yang	feminine: Yin
I Ching	Light	Dark
I Ching	Time	Space
Many sources	Verbal	Spatial
Many sources	Intellectual	Intuitive
Vedanta	Buddhi	Manas
Jung	Causal	Acausal
Bacon	Argument	Experience

Samples (1976) provides Richard Jones' list from the perspective of a psychotherapist:

Freud	SecondaryProcess	PrimaryProcess
Piaget	Primary Symbolism	Secondary Symbolism

Piaget	Accommodation	Assimilation
Schactel	Conventionalized	Trans-schematic
Maslow	A Cognition	B Cognition
Taylor	Convergent Thinking	Divergent Thinking
Langer	Discursive Symbolism	Presentational Symbolization
Polanyi	Focal Awareness	Subsidiary Awareness
Neisser	Sequential Processing	Multiple Processing
Kubie	Conscious Processing	Preconscious Processing
Wertheimer	Productive Thinking	Blind Thinking
Bleuler	Realistic Thinking	Autistic Thinking
Many sources	Public Knowledge	Private Knowledge
Many sources	Literal Meaning	Metaphorical Meaning

(p. 20)

There is currently controversy as to whether, in fact, certain capacities reside in one hemisphere or the other. While it is not within the scope of this thesis to evaluate the research in this area, some of the findings are considered in Chapter 3. What is important is to recognize that the goal in education and counselling is to develop balance and integration, both within the individual and his environment. This theme will be elaborated throughout this chapter.

Sample's Theory of the Metaphoric Mind

Bob Samples, in *The Metaphoric Mind,* (1976) differentiates between the metaphoric (right) mind and the rational (left) mind. He traces the development of mankind, going back to the time prior to the acquisition of language, when time was perceived as cyclic rather than linear. Cyclic time is natural, measured in seasons, days, seeds and birth-death cycles. Linear time is an abstraction. Just as life from conception to birth recapitulates the evolution of man, Samples sees the period from birth on as a recapitulation of the development of Western culture. With language and abstraction come the separation of mind from nature and the separation of function in the cerebral hemispheres:

> The logic and linearity of the Western mind is nourished by the sequential fragmentation of time and space....The holism and vivid acceptance of cyclical thought so typical of the Eastern mind resides in the right hemisphere. (Samples, p. 41)

Samples explores the link between the cyclical and the linear, the rational and the metaphoric, and the perceptions of cultural and natural as reflected in language and language use. He argues that language affects mind function: with the left-hemishpere dominance of our culture, the metaphoric mind is suppressed. Holistic thought and cyclical perceptions lack the logical, linear precision which is compatible with Western rationality. He traces the development of mind:

> The child in utero is in natural systems
> The child once born is in cultural systems
> The dominant time mode of natural systems is cyclic
> The dominant time mode of our culture is linear
> Humankind preferred cyclic time until about 10,000 years ago
> Humankind (at least the dominant cultures on earth) now prefer linear time.
> Language use reflects the time mode preference: cyclical for the Hopi and linear for speakers of English. (p. 48)

He also suggests that Western psychology, so long dominated by simplistic linearities, is in transition, moving towards more holistic kinds of theories. He suggests that today's scientific psychologists prefer rationality and linearity, while the therapeutic psychologists prefer metaphor and cyclic movement. Samples argues (1976, p. 50) that while Piaget functioned intuitively, metaphorically and with profound holism, his structure defining and delimiting stages of intellectual growth was very rational and logical:

> He chose logic as the gauge by which he would assess the growth of intellect. Then he chose language as the medium through which the progress towards logic was demonstrated. Thus with a philosophy of linearity (logic) and a process of linearity (language), it is hardly surprising that psychological effectiveness (maturity) was judged by how linear a person was. (p. 57)

The reason for challenging the rational, linear, culturally ordered constructs that currently define the human mind, according to Samples, is that they describe only the functions of the left cerebral hemisphere in most humans. It is not Samples' intent to minimize the intuitive or rational genius of Piaget, but rather to point out the problems that arise from the application of such constructs. Kohlberg applied Piaget's constructs to moral growth:

> Kohlberg maintains that humans cannot be morally operative unless they are at the formal operations stage of Piaget. Culturally this would probably exclude all Hopi, Zuni, Swahili, Maori and Eskimos.... Theoretically neither Piaget nor Kohlberg could allow this condition to be considered moral - theorists must somehow be accountable to those excluded by their theories as well as those included. (p. 59)

To summarize, Samples distinguishes two minds within the human brain, based on Bruner's (1965) distinction between rational-logic knowing and metaphoric-intuitive knowing. The right cerebral hemisphere is the metaphoric-intuitive hemisphere, performing analogic functions and tumbling through myriads of data simultaneously, while the left cerebral hemisphere is more constrained, sifting through imputs and reducing functions to logical rational form and acting more like a digital computer (Samples, 1975). Interestingly, Samples (1975) found that when confronted by a problem, children, if left alone, tended toward more metaphoric-intuitive modes of exploration. They intitially tried to "get to know" a problem through their informal, peripheral experience base:

> There would be prolonged periods of play, fantasy, and sensory exploration. The children would literally play with the problem, make jokes about it, and tease the equipment into doing things it was probably never designed to do. (1975, p. 21)

Samples suggests that this is a natural way of knowing, and that our culture, language and education have cut us off from our inner wisdom.

Pearce's Theory of the Magical Child

A similar view is expounded by Joseph Chilton Pearce, in his book, *Magical Child* (1980). Central to his theory is the notion that there is a beautifully co-ordinated biological plan for the development of intelligence just as there is for physical growth. He adopts the model suggested by Karl Pribram (1971) in which the brain is a hologram of the planet Earth, which is also a hologram of larger holograms. "At birth the brain, as a hologram fragment, must have exposure to and interact with the earth hologram to achieve clarity" (Pearce. p.7). Pearce, like Piaget, sees the infant as driven from within by intent, which impels him into action with the physical world. Development in the first four to five years is the structuring of brain patterns from sensory experience and the resulting feedback and synthesis that occur in the brain (Pearce, p. 13). Thinking arises out of concreteness. Intelligence first requires full and accurate interaction with the earth (body knowing) and progresses in sequential stages towards pure thought.

Pearce conceives of the biological plan for the development of intelligence as based on a series of matrix formations and shifts. The matrices are first the womb, then mother, the earth, the self, and finally mind brain.

"Human beings are designed to grow in intelligence by learning about, and gaining ability to interact with, one source of energy, possibility and security after another " (p. 19). The child moves from the symbiotic relationship in utero, to birth and dependency upon mother, then until age seven the child explores and structures a knowledge of the earth matrix. From seven to eleven children structure a knowledge of self and personal power which prepares them for a shift of matrix from earth to self. This shift occurs by adolescence. Pearch holds that:

> Biologically we are supported at each matrix shift with enhanced physical ability, a spurt of new brain growth that prepares us for new learning and specific shifts of the brain's way of processing information. Furthermore, intent always precedes the ability to do; that is, during any particular stage of development nature is preparing for the next stage.... All we must do is fully accept and exist within our developmental stage and respond fully to its content. This means that every stage of development is complete and perfect within itself. The three year old is not an incomplete five year old; the child is not an incomplete adult. Never are we simply on our way; always, we have arrived. (p. 20)

In Pearce's view, with only the provision of the appropriate content for the child's interactions, intelligence will evolve. In fact, he suggests that the first ten years are designed for acquiring a full dimensional knowledge of the world and learning how to interact with it physically and mentally (p.3). Without this knowledge of the world there is no basis for abstraction and creativity. This world knowledge is contrasted with the cultural body of knowledge which splits humans off from their lives, rather than connecting them (p.40).

While a complete review of Pearce's theory is not possible here, several significant aspects must be noted. Bonding is a central issue, at any age, and is defined by Pearce as "a nonverbal form of psychological communication, an intuitive rapport that operates outside of or beyond ordinary rational linear ways of thinking and perceiving" (p. 145). The right hemisphere is more closely associated with primary process, and the left with the social self. As we evolve and shift from one matrix to the next, there is bonding at every stage. Successful bonding involves primary processing, hence right hemispheric involvement.

Pearce's thesis, like Sample's, is that through socialization the right hemisphere processes are repressed: this is how people are cut off from an intuitive awareness of the earth, and consequently from themselves. Rushing children into literacy, and the central emphasis on logical analytical thought in schooling, goes against nature's biological plan. Pearce would propose waiting until the child was ten or eleven years before concerning him with literacy. Instead, the most important task in the early years should be ensuring that the child's biological need for interactions between physical body and earth, through physical encounters with the tangible world, are met. Pearce believes that failure to provide sufficient mature concrete matrices hinders later abstraction (p. 187). Thus, it is important to allow the child to fully explore the world, both external (artifacts and the natural world) and internal (imagination and fantasy), without imposing adult values or attempting to engineer this learning. Through the child's naturally occurring intent to play, learning will unfold. And what of the right hemisphere? Pearce suggests that the biological plan intended that we function wholistically:

> A full language system is found in both hemispheres of the child's brain but later the right hemisphere goes mute. Although we are conditioned to orient to language feedback until it seems to fill the stage, the rest of the mind-brain goes right ahead as genetically planned.... We need to learn again to listen to our body and our primary process. They have their language too.... (p. 263)

There is currently, in our culture, an increased emphasis on listening to our bodies and primary process; on valuing the metaphoric mind, as evidenced by the growing interest in areas such as dreaming, fantasy, guided imagery, meditation, hypnosis, and the popularization of findings of brain research.

Salk's Theory of Survival of the Wisest

Jonas Salk, in *Survival of the Wisest* (1973) writes about his search for a natural explanation for the inversion of values occurring in our time. He looks at human evolution in terms of growth curves in biological populations, and suggests that the survival of the human species may require a shift in values that have enabled our evolution to this point. He speaks to the need for a reconciliation of dualisms:

Table I

Being - Becoming
Absolute - Relative
Parts - Whole
Extremes - Balance
Quantity - Quality
Present - Future
(p. 73)

Table II

Biological - Somatic - Genetic
Individual - Species

Metabiological - EGO - BEING
Intellect - Intuition
Reason - Feeling
Objective - Subjective
Morality - Reality

Differences -	Differentiation
Competition -	Co-operation
Power -	Influence
Win-Lose -	Double-Win

(p. 73)

Wisdom, he maintains, arises from both parts of the brain. He also sees metaphor as a way to communicate with, or to reach, the wisdom of the right hemisphere:

> Human imagination furnishes Man's emerging consciousness with means for perceiving the forces which he senses but to which he is otherwise blind.... By using the processes of nature as metaphor, to describe the forces by which it operates upon and within man, we come as close to describing "reality" as we can within the limits of our comprehension. Men will be very uneven in their capacity for such understanding, which, naturally, differs for different ages and cultures, and develops and changes in the course of time. For these reasons it will always be necessary to use metaphor and myth to provide "comprehensible" guides to living. In this way Man's imagination *and* intellect play vital roles in his survival and evolution. (p. 45)

Salk forsees the development of new educational systems and techniques for facilitating consciousness and understanding of others, contributing to pro-life evolutionary trends. He sees groups arising desiring a better life for man, initiating movements which will manifest their effects on both the species and on individual lives. He stresses the importance, in the educational system, of developing imagination and curiosity, which are fundamental to the integrative capacity of mind. He postulates that the effect of the development in imaginative functions or cognitive development will be strongly positive if *both* are trained with equal vigor, and not that one is favored over the other in an unbalanced way (p. 83) :

> This could have a salutary effect, and encourage the emergence

> of more balanced persons who are healthier metabiologically and who might become wise not only in the course of surviving the viscissitudes of the past but in the course of life as a positive experience. (p. 83)

B. Conclusion

The works of three authors have been considered, all of whom argue strongly that the qualities generally associated with the left hemisphere, the rational, analytical, logical mode, have been over emphasized in our culture and in our schools. They suggest that the right hemisphere qualities, the analogic, synthetic, simultaneous mode, have been neglected. The motivation behind all three works surely was to generate interest in the development of right hemisphere qualities, and to stimulate change in the ways that we think of development and growth. Ultimately all three authors would have hoped to have impact upon the educational system. Perhaps this can be viewed as a challenge, in a consideration of how educational systems in general, and school counsellors in particular, can respond.

III BRAIN FUNCTIONING AND DEVELOPMENT

A. Brain Functioning

The well documented research carried out by Roger Sperry and his associates (Edwards, 1979) has contributed to a fundamental shift in the way in which learning can be conceptualized. Findings indicate that each hemisphere of the brain perceives its own reality, and these differing perceptions are communicated between hemispheres and reconciled via the communications network of the corpus callosum and other connections. It was found, further, that the two hemispheres process information differently. While the left hemisphere, in most people, operates in an analytic and sequential manner, storing information in a part-by-part coded form such as words; the right hemisphere specializes in understanding an entire idea and filling in gaps where necessary, storing information in a spatial manner, as in pictures or images. Thus, the left hemisphere is verbal and analytic: the right hemisphere is nonverbal and global. While the right hemisphere processes information differently, in a rapid, complex, whole pattern, spatial and perceptual mode, it is no less complex than the left hemisphere's verbal analytic mode.

One must exercise caution in interpreting these findings as there is a danger of oversimplification. Language is not completely a left-brain activity, nor is art completely a right-brain one. Rather, the two hemispheres extract different meanings from the same experience, and work together to generate a unitary impression of the experience. People have the capacity to engage in both left and right modes, and the particular processing style at any time depends upon factors such as personal preference, particular features of the experience, instructions, habit and past learning. Fadley and Hosler (1979) suggest that the major function of hemispheric specialization is the ultimate integration of information from both hemispheres into a meaningful whole; a process which leads to higher human capacities.

This model of brain functioning gives us a perspective for viewing individual differences. Languis, Sanders and Tipps (1980. p. 13) indicate that such differences may arise from: (1) predominant processing styles of individuals and their ability to appropriately adapt processing,
(2) experiences that enhance or inhibit integration of processing or
(3) dynamic interaction of processing styles and experience. There may also be stage-specific variations throughout life as suggested by Piaget, Vygotsky and Epstein's brain growth studies (Chall and Mirsky, 1978).

If brain functioning is viewed in terms of processes which both influence, and are influenced by our experiences, then it is possible to begin to view learning in a spiral fashion. Experience shapes learning, and learning shapes experience. This raises a multitude of questions as to how children learn, what they learn and what happens in school.

Western society has both valued and emphasized left mode analytical thinking and there is no question that this is the mode that has been emphasized in our schools. And while developing abstract, logical, rational thought is a very real and important aspect of learning, it is not all there is to learning. Yet schools have tended to downplay, if not actively discourage the sensing, feeling, intuitive ways of perceiving and processing. The argument that is put forth here is that there is a need to gain a greater understanding of the nature and the place of "right-brain knowing" in the learning process (including developmental growth, formal education, and lifelong learning). This is not to suggest a need to 'teach to the right brain' or to de-emphasize "left brain thinking', but rather that an holistic approach be adopted. Such an approach demands a stepping back and looking at the larger picture; at learning in its broadest, global sense, before it can be determined how to best facilitate integrated learning in both adults and children.

One way to gain such a perspective is to look at learning from a developmental standpoint. How does learning begin in humans, and how does it unfold? At one time it was felt that the mind of the newborn infant was like a blank slate, awaiting the imprint of the world as he began interacting with it. However, recent research suggests that infants come into life with considerably more than was thought. There is ability to comprehend space and depth, and to discriminate between shapes and forms and even color (Fadley and Hosler, 1979). Further, research studies have shown that the so-called random movements of newborn infants immediately co-ordinated with speech (Condon and Sander, 1974). Computer studies indicated that for each infant there was a complete and individual repertoire of body movements that synchronized with speech: there was a specific muscular reaction to every part of the culture's speech pattern. Fadley and Hosler (1979, p.6) discuss infant studies in relation to differential performance of the brain. By analyzing brain wave activity, it was found that when infants hear sounds containing phonetic structure, the left brain hemisphere becomes active while the right apparently rests. Nonlanguage sounds produce activity in the right hemisphere while the left remains inactive. Apparently, at as early as two weeks, the infant brain is performing differentially.

In their book, *Understanding the Alpha Child at Home and School,* Fadley and Hosler (1979) raise the question as to whether there is a tendency to oversocialize children by stimulating left hemispheric development to the neglect of right hemispheric aspects of our being. They suggest that there is, and also that the child with unequal hemispheric capacities will likely have difficulty developing the basic skills in schooling. The authors then devote the major portion of their book to a consideration of how best to 'help' the right minded child whom they call the naturalized (as opposed to socialized) child. This approach stems from the fundamental assumption that phenomenalism and egocentrism are lower forms of knowing, and that, as we mature, we progress towards the higher forms: constructivism and reflection. This was Piaget's view. There is currently, however, considerable emphasis on the notion that the various dimensions of learning (abstract/concrete, active/reflective) are equipotent ways of knowing (Kolb, 1984, McCarthy, 1981, Pearce, 1980).

This difference certainly constitutes a key issue in learning theory, and the stance one adopts will have a major impact on how one interprets the data from brain research, and on the implications one sees for education, and for our own learning, thinking, and metacognition. Such a difference is evident in considering the viewpoints established in two works dealing with learning and development in children. First to be considered was *Understanding the Alpha Child as Home and School*, followed by a comparative look at *Magical Child* by Joseph Chilton Pearce.

B. The Alpha Child

Hosler and Fadley (1979) see the early learning of the child as dominated by the right brain processes or the 'naturalistic mode'. The child's learning is experiential: feeling and sensing predominate. As the child matures, the left hemisphere processes become the primary concern of consciousness:

> By the time the child is five years old he is well on his way to using language and social value structure as his primary mode of thinking and perceiving. Naturalistic thought gives way to logic, to time and values, to learning how to behave in acceptable ways in order to structure the world into meaningful relationships. Slowly the child becomes less a child, and more a developing adult. Finally, the

> naturalistic patterns of behavior are repressed in favor of language and social meaning .(p. 8)

This process occurs, they suggest, due to the child's tendency to seek higher levels of knowledge and greater personal control, and because social conditioning and rewards subordinate the natural consciousness. Having spent the first three or four years developing the basic motor and sensory areas of development, the child enters a phase of intense expressive language development. By age seven the child is generally capable in both sensory and motor areas as well as language usage. Ideally, the two modes of functioning are integrated. Often, however, they are not. Delayed motor functioning may be accompanied by language difficulties.

Fadley and Hosler (1979) state that by the first grade, a constant level of maturity and capacity in both hemispheres is necessary for the child to function well socially and educationally: unequal competencies can cause social, personality and educational problems (p. 41). Further, they claim that while the child with unequal competencies is "neither deviant nor disturbed; he is different. The culture is totally unprepared to deal with this unusual and often frustrating child" (p. 42).

Is it mere coincidence that the child who, for the first five years has gone about busily exploring and interacting with the world, who has learned how to grasp and sit, crawl and walk, how to be affectionate and to utilize language to express himself or herself and to learn more about the world, suddenly enters school, our major institution of socialization, only to find that he/she will have learning problems? What went wrong?

C. The Magical Child

Brain Development and Functioning

Joseph Chilton Pearce, in *Magical Child* (1980), theorizes at length about what goes wrong. Whereas Fadley and Hosler view the socialization process and the accompanying repression of right hemispheric processes as a functional part of maturation and growth, Pearce describes instead a process whereby we cut ourselves off from an intuitive awareness of the earth and consequently from ourselves. To understand how this occurs, it is necessary to understand Pearce's conceptualization of the brain and development.

In his more recent work, *Magical Child Matures* , (1985), Pearce outlines his model of brain development and functioning. He traces the development of the brain in human civilization. Our single brain is actually comprised of three completely different brains: the three major brain types developed in evolutionary history. Paul Maclean's *A Triune Concept of the Brain and Behavior* (1973) treats this topic in depth. The oldest of these, and the foundation of our brain system is the reptilian brain. This is the 'physical' brain; the gateway for all of our senses, except smell, and the site of things that we do automatically. Superimposed on the reptilian brain is the old mammalian brain, or the 'emotional' brain. This mid-brain evaluates quality, esthetics, or feeling tone. Feeling includes the sense of touch, as well as emotions. Pearce defines feeling tone as " a relational quality, character or condition existing between subject and object, as the relation between things or events, or between ourselves and our experience" (p. 13). The third brain, the neo-mammalian or intellectual brain, is built around the old mammalian brain and consequently utilizes both older brains. Pearce describes the mid-brain as handling our loves, hates, fears, attractions and aversions, as well as all of our bonding. He also suggests that it is the cohesive brain that ties together the physical and thinking brains:

> The sensory information coming in through our old brains is given its meaningful shape through the emotional energy of this mid-brain .(p. 14)

Pearce further describes the mid-brain as the 'heart' of our brain system, with direct nerve connections to the actual heart. The new brain is the instrument through which we think about the materials furnished by the two animal brains. Such thinking includes computing, playing, analyzing, dissecting, synthesizing and creating.

This new brain is divided into two hemispheres which are separated at birth, sharing only the common connections with the midbrain. The corpus callosum, the bridge of connecting nerves, begins slowly to grow after about the first year, and is not complete until the fourth year of life. Pearce emphasizes the major significance of the late appearance and slow growth of the corpus callosum. Once completed, communication is possible between the left and right hemispheres of the new brain without reference to the two primary brains. Pearce also suggests that the timing of the appearance of the corpus callosum provides a major clue to child development, as subsequent discussion clarifies.

While the old brain and mid-brain have many connecting communication links and function in synchrony, the connections between the mid-brain and new brain are relatively sparse. The left hemisphere of the new brain is only casually connected to the mid-brain in comparison to the richer neural connections between the right hemisphere and the mid-brain. The mid-brain, responding to both the physical and intellectual brain, is seen as the link or translator between the vastly different languages of the old and new brains:

> When we open our eyes and see images of a physical world, we

> engage in an old brain activity. When we close our eyes and produce images of things not present out there, this is *imagination....* We recognize the importance of translating images of the outside world, but translating internal imagery is equally important. (p.16)

Pearce postulates that the imagery of thought and the imagery of the world differ qualitatively, and require mediation or translation. Using the example of the marks on a page, "c-a-t", Pearce suggests that the old brain brings in the plain marks, but the mid-brain and new brain add the meaning. But before the new brain can contribute, the mid-brain must take those marks brought in by the old brain and translate them into "abstract images of the new brain, or into an imagery available to that new brain's abstract imagery." Similarly, the mid-brain takes the abstract images of the new brain and translates them into the sensory motor responses of the old brain, as when we take a thought and write it on paper. This two-way functioning of the mid-brain occurs through what Pearce calls "a metaphoric type of imagery-language."

Pearce suggests that the three-part brain system is designed to function in an integrated fashion according to need, and that nature's blueprint for development is organized around our three brains and their interlocking actions. His theory is that each stage of the child's development constitutes a time for focus on and development of each of these brains in the order of their evolutionary appearance.

The first capacity to be developed is the old brain's bringing in raw information. Secondly, the mid-brain's task of organizing that raw information into meaningful categories. Thirdly, the new brain's learning to 'play' with the structures built up by the first two systems. This much takes roughly fifteen years to develop, prior to what Pearce terms as the post-biological system. This later stage has not been considered here, as the concern is with child development. It must also be noted that despite the present consideration of the separate functions of the three brains, all of the brain is involved from around the fifth month *in utero* , and that the brain always functions as an integrated unit.

Development involves periods of concentration on particular brains or parts thereof, or of interactions between these. A theme throughout Pearce's writing is that nature is always preparing for the next stage. It is in this light that he discusses brain development in terms of human life. The first year is devoted to the physical-sensory system related to the old brain. Synchrony with the mid-brain occurs concurrently, but the focus is sensory-motor. Following establishment of the sensory-motor brain is a shift in locus of attention to the mid-brain, allowing, simultaneously, physical, sensory and emotional organizations. The child develops will, or instinctual force to overcome obstacles to development, as well as likes and dislikes - a judging experience:

> The esthetic polarization puts the information sensed through the old brain into meaningful relationships, and out of this a sense of ego, as distinct from the physical- sensory world of the reptilian brain, begins to take shape .(p.2)

It is after this shift of locus to mid-brain that the corpus callosum, the bridge of connecting nerves between the two new brain hemispheres, begins its growth. The two separate processes, self as emotion, and self as physical body, are now taking place. These two functions require some specialization of hemispheres, the intricacies of which are not yet firmly established. Specialization does not imply isolated functioning: integral brain action is always required.

Pearce states that "by around age four, eighty per cent of the child's knowledge of the physical world, language and ego awareness distinguishable from the world is complete" (p.21). The next shift of locus of awareness is to the development of intellect in the new brain. The corpus callosum is completed and there is an even distribution of ego among the three brains from ages four to seven. This is when, Pearce suggests, the child develops an analogical language system, "a metaphoric-symbolic stystem of imagery transference, centering in the mid-brain and right hemisphere"(p.22). A perfect balance between body, mind and feelings is achieved.

Then around age seven, in Pearce's model, the locus of awareness shifts out of our primary brains. The blueprint moves in the direction of mind as a point of objectivity, where ego can act as though separate from the brain. It is a crucial postulate of Pearce's theory that:

> With the power of the new brain we bring all three systems into synchrony, through storytelling, fantasy, imaginative play, and mirroring our parent and sibling models through imitative play. (p. 23)

Next, between seven and eleven, "nature withdraws our locus of awareness from the right hemisphere", and development is concentrated on the more isolated left hemisphere. Around eleven years, we enter into the world of mind: creative thought, abstract logic and semantic knowledge, while the right hemisphere remains on "automatic pilot." In Pearce's model, development is the formation of ego-mind related to each brain successively, followed by dis-identifications of ego mind from the particular brain parts. After around fifteen years, he postulates, our minds no longer have a particular locus within the brain, rather, our brains are the physical aspect of our experience and mind is the subtle counterpart. Thus the stage is set for what Pearce calls the post biological development of psyche, soul or spirit (p. 24).

Implications of Pearce's Model

Having considered Pearce's treatment of the evolution of the brain, it is possible to take a closer look at the implications of this model in the development of thinking in the child. But first it is important to clarify the larger context: how the child's thinking fits in to the broader perspective. In Pearce's model, biological development moves from inner possibility to outer actuality (childhood). Once this plan is complete, we utilize it to move from outer actuality back into the inner fields of possibility (post biological development). When we have completed recreation we move towards creation (p.6). Thus, the child plays with the materials of the world, but then, in the post biological stage, our consciousness enters into realms beyond the given materials. While the child's play is re-creation, the actual creation of the post-biological stage is also play; we develop the ability to play in what Pearce calls the "generic interior realm from which the outer world springs." This, he states, is creation itself and is the goal of our lives.

Pearce also suggests that our lives are based on imagery. Imagery here is defined as perception, which Pearce sees as a creative act. There are three types of imagery, corresponding to the three brains: physical imagery relating to the physical world (old brain), imaginative and dream imagery relating to an inner world (mid-brain), and a pure abstract imagery related to thinking and creativity (new brain or neocortex) (p. 12). Recall that the old brain, handling physical imagery, is the brain through which we sense and respond to our physical world. Early childhood is designed for bringing in raw information about the world. Then comes the second stage, the sorting out of this raw sensory data into meaningful categories of relationship. Additional new information may be added as well. The third stage in child development is that of practice and variation of what was learned in the preceding two stages. It is important to note that this cycle is not only developmental: it can be found in all learning (e.g. learning to use a computer, or learning a language). This third stage of practice and variation starts at about age four and continues until about age seven. Pearce points out that the structures of self, world and language are completely intertwined to form a single structure of knowledge, which is the active intelligence of that child.

Approached here is a key issue in the relationship between child development and metaphor; the central focus of this thesis. After about age four, the locus of the child's ego awareness shifts into the new brain. (This is in addition to the two primary brains). The child is now aware as a physical body, a feeling center, and a mind. Ego identifies with all three brains: The child is equally an acting, feeling and thinking center. Further:

> The imagery of that new brain, which now comes into its own for a concentrated development, is completely different from the imagery handled by the old brain...The issue between four and seven is: How can the concrete information, or images, of the old brain be translated into the abstract images of thought in the new brain? And how can three so distinctly different systems be brought into synchrony?
>
> (Pearce, 1985,p.59)

Pearce argues strongly that this period of practice and variation must accomplish this synchrony or harmony and transference of imagery in order for further growth of intelligence to occur. The child's key question during the preceding sorting out stage and continuing into the third stage is "Why?", and the nature of this stage determines the success of the important third stage. Pearce concludes that the four to seven period is "the age of metaphor and symbol, the language of analogy, the language of the dream" (p. 60). Thus, the answers that we give to the "Why?" questions of children must be symbolic, metaphoric or analogical. ("The sun has gone to sleep now.") These types of responses provide meaningful relationships for the child's world and values.

Abstract concepts such as measurement, motion, and time belong to the period after age seven, and:

> nature's timetable should be honored. Analogy is the language of the dreaming child, the language of the heart: it is the center that holds all things together (p. 60).

Pearce presents a very well developed model of child development. A lengthy discussion of that model was necessary to provide a context for an answer to the question posed earlier in this chapter. The question was "What went wrong?" What went wrong so that a child who develops beautifully from birth to five years, suddenly has "problems" in school. Fortunately, with an understanding of brain development from Pearce's perspective, the way that he would respond to that question can be discussed briefly. Basically, he argues that schooling does not honor nature's plan. His argument is not so much that left hemispheric thinking has been over emphasized at the expense of the right, in fact, he suggests, the classroom may not be the place for right hemisphere development at all. Instead the classroom is the living earth, both with its material matter and models of intuition. "The curriculum for this development is built within us, and has an explosive, universal longing for expression"(p.83). This expression comes through storytelling, play and pretending. The crucial time for this is the first seven years; a secondary time is from seven to eleven. We need to allow each modality to develop as intended during the pre-logical years. In *Magical Child,* (1980) Pearce stresses this point when he suggests further that abstract ideas about the child's world relations are not only inappropriate at this stage, but are damaging if given to the child with the expectation that the child can incorporate them into his or her logic (p.126). Children should be interacting with the world, (active, exploring, sharing, interacting with models, pretending and creating at will, driven by their natural intent to learn) not sitting quietly at their desks struggling to gain meaning from abstract symbols on a board fifteen feet away.

Pearce's theory rests on a model of brain functioning which incorporates aspects of the theory of hemispheric specialization. The approach taken in this thesis is that such a theory serves as a *model.* It is recognized that the division between hemispheric specialization has tended to be oversimplified in some of the literature. However, utilizing this model assists in the description of otherwise abstract functions. It is clear nonetheless, that any left hemisphere action requires support from the right hemisphere; the brain functions as an integrated unit.

Having considered research on brain functioning, two views of the child based on theories of brain functioning, and Pearce's theory of brain development in the child, this chapter concludes with a summary of some of the research on brain functioning from a developmental perspective, wherein there is some support for Pearce's theory.

D. A Developmental Perspective: The Research

While there is some disagreement about whether children are born with "whole" undifferentiated or thoroughly "split" brains, it is generally accepted that they do develop lateral brain specialization with communication between the cerebral hemispheres (Gray, 1980; Wittelson, 1977). Kaufman (1979) argues against a theory of cerebral dominance, and in support of a theory of dynamic cerebral organization, with emphasis on hemispheric integration. There is evidence suggesting a developmental progression towards such integration:

> The human brain develops from the back to the front, from the inside to the outside. The neocortex is composed of approximately six layers of neurons that develop at different times in different areas,

and perform different functions. The two cerebral hemispheres are connected by a bundle of myelinated nerve fibers, called the corpus callosum. These fibers connect neurons in one hemisphere to similar neurons in the opposite hemisphere. The two hemispheres ultimately perform different, but complementary functions .(Johnson, 1982)

The corpus callosum, however, is structurally and functionally incomplete, and until around two years of age communication between the two hemispheres is limited (Gazzaniga, 1974; Kraft, 1976). There is evidence (Kaufman, 1979) that the right hemisphere is functionally and psychologically more mature at birth than the left, and is more involved in learning in the early stages of life. The spatial, nonverbal sensory types of learning predominated during the first years of life, and are assimilated readily by the mature right hemisphere. The left hemisphere is less mature and more adaptable at birth, and with the growth of the child and development of language it subsumes complex and analytic functions. Brooks and Obzrut (1981) suggest that laterality may be strongly influenced by factors other than fixed structural attributes of the brain, even at a very young age. They propose an integrated approach which combines the structural and attentional models of brain organization to explain hemispheric functioning: as "anatomical maturation along with increased environmental stimulation which increases activation should result in brain development" (p. 13).

Sinatra and Stahl-Gamake (1983) argue strongly that the right hemisphere develops first because it is more involved with perception of the environment, and that right hemisphere stimulation is important for language learning and general conceptual development. There is support for this view in the findings of Piaget and Epstein. Piaget identified four periods of cognitive development (Phillips, 1969), and Herman Epstein (1979) found evidence of brain growth spurts at the corresponding approximate ages. Virginia Johnson

(1982) outlines the major developments at each of Piaget's stages,along with the neurological growth accompanying them.

What emerges is a picture of gradual change in the development and functioning of the brain on a neurological level, and observable measurable changes in the capabilities and processes of the child on a practical level. There would seem to be support for an interactionist view of development. Brain development permits the possibility of new activities which stimulate further neurological development. Epstein (1979) proposes that the development of each growth period largely depends on how well the previous growth period was developed. Johnson (1982) cautions that by asking learners to perform tasks prior to the development of the appropriate area of the brain, we may be forcing them to use less appropriate neural networks and thus cause failure and frustration.

There are several lines of thought arising from this view of development. One is that the younger child depends on right hemispheric processing in the early years to adapt to the environment and that gradually, as the left becomes more well developed, dynamic integration occurs. Some hold the view that the two hemispheres function differently, and the amount of involvement of each hemisphere depends on the nature of the task. There is also the view that the right hemisphere is our primary processing mode, and that our culture has over valued the qualities of left hemispheric processing, especially in our schools, and that the right mode abilities have atrophied. A related perspective is that many learning disabilities are actually the result of a right mode processing preference and unequal or less developed left mode processes.

Debate over these issues continues across disciplines as widespread as neuropsychology and philosophy. Although it may never be possible to prove with certainty how the brain functions (just as one can only theorize about subatomic particles) it is possible to draw from the various research strands and formulate hypotheses about brain development. And certainly one of the major strengths of brain development and learning style theory has been the wealth of research and hypotheses generated.

E. Conclusion

There would seem to be support in the research for Pearce's view of child development. One conclusion from this perspective is that activities generally considered to involve or develop right mode processing are fundamental for child development, and that there should be greater emphasis on these, particularly in the early years. There have been volumes written on the types of activities in which one can engage children that honor nature's plan. Among these are visual thinking, fantasy, and multisensory learning, described by Williams in *Teaching for the Two Sided Mind* (1983). The Centering books by Hendricks and Wills and Roberts (1975, 1977, 1981) describe centering, relaxation, dreamwork, meditating and building intuition. Violet Oaklander, in a beautiful book entitled *Windows to Our Children* (1978), uses a Gestalt approach and incorporates drawing and fantasy, storytelling, poetry and puppetry, enactment and sensory experience. Fundamental to all of these activities are the concepts of imagery and metaphor.

Chapter four provides an in-depth consideration of metaphor in relation to learning and understanding, clarifying why it is so important, and indeed, so powerful.

IV. Metaphor and Its Relation to Learning and Understanding

A. Theories of Metaphor

There is a very broad scope in the treatment and definition of metaphor in the literature. Treatment varies depending on whether the context is literary devices, learning, or therapy. The focus in this thesis is on the latter two contexts, but they overlap somewhat with the former, as metaphor is a way of communicating. There is general agreement that metaphor is the transfer of meaning. Ortony (1975) indicates that etymologically it means "transfer" (from the Greek *meta* [trans] + *pherin* [to carry]):

> According to Aristotle a metaphor is a means of comparing two terms and this view is shared by Richards [The Philosophy of Rhetoric, 1936] who classified the two terms and the relationship between them as "tenor" (topic) of which something is being asserted, the "vehicle", the term being used metaphorically to form the basis of the comparison, and the "ground", namely, that which the two have in common. The dissimilarity between the two terms being compared determines what is called the "tension". (p. 45)

In its broadest sense, the definition of metaphor is essentially a comparison. If this seems a very sparse definition, the elaborations upon it by various authors are not. Billow (1977), in his review of the psychological literature on metaphor, first explains what metaphor does, and then suggests three categories of theories. He begins his discussion by indicating that metaphor is an example of polysemy, which refers to words with two or more distinct meanings. Such words provide economy in the language and mental storage of words, as well as supplying language with greater flexibility and expressibility. Further, he suggests that in their ability to particularize abstractions, the creation of metaphors may result in increased intellectual clarity. Billow (1977) cites Wharf's proposal that since different languages utilize diverse metaphors to express certain emotions, actions and ideas, metaphor thus influences both the perception and cognition of the language culture. Metaphor may also assist memory, through the formation of associative connections. Billow (1977) also aruges that metaphor is a creative device, conforming to Jackson and Messick's (1968) criteria for creativity: unusualness, appropriateness, innovation, and condensation of meaning. He refers also to Skinner's (1957, p.98) comment that:

> Metaphorical extension is the most useful when no other response is available. In a novel situation to which no generic term can be extended, the only effective behavior may be metaphorical (p. 86)

In his review of the psychological theory and research of metaphor, Billow cautions that the works he considers are not necessarily extensive, and are at times speculative. Nonetheless, three orientations are presented: learning and mediational, nativistic, and motivational. Consideration of the learning and mediational theories begins with Skinner's observation that in metaphor "new properties of nature are constantly being brought into control of verbal behavior" (Skinner, 1957, p. 95). Billow suggests that this comment illustrates the emphasis which learning and mediational theories place on the sensory (empirical) basis of metaphor. In Skinner's view, metaphor was a verbal response to stimulus properties which had not yet been reinforced by the verbal community (e.g. a child saying that his or her first glass of soda water tastes "like my foot's asleep".) A similar physical sensation resulted in the metaphorical extension. Brown (1968, p. 149) also posits a response or reaction similarity as a basis for metaphor. Asch (1955, 1958) found, in a cross-cultural study of metaphor, that historically independent languages utilized the same sensory adjectives (e.g. straight, cold, hot) in reference to both physical and psychological properties. For example, *straight* means honest, righteous and correct understanding in Homeric Greek, Old Testament Hebrew, and Chinese. Both Asch (1955, 1958) and Brown (1968) support a complex mediational model: metaphor arises out of mediations in terms of correlations among experiences. Some metaphors, rather than being based on naturally occurring correlations between stimuli, may be based on culturally established correlations between words.

Nativistic theories suggest internally based processes of individual sense modalities. Billow summarizes Werner's postulate that:

> an "orgasmic state" consisting of a "primordial matrix composed of affective, interoceptive, postural, imaginal elements, ...directs, through a process of "dynamic schematization," all mental operations involved in symbol formation, such as scanning, selecting, discarding and sequentializing, and most importantly for metaphor formation, the capacity for seeing similarities in "expressive qualities" of objects and events that appear, from other aspects, to be dissimilar. (p. 87)

Dynamic schematization is also characterized by "physiognomic perception" in which "objects are understood primarily through the motor and affective attitude of the subject" (p.88). Lifeless things thus may be personified. This was illustrated in a study by Krauss (Billow, 1977, p.88) in which subjects demonstrated agreement in affective descriptions given to neutral, geometric properties of lines. Another hypothesis in nativistic theory is Brown's (Billow, 1977, p.88) suggestion that some metaphors may result from a "hypothetical intersensory characteristic of individual sense modalities." That is, while certain sense qualities are associated with one receptor system, essentially such qualities are inter-sensory. This may explain the universality of Asch's double function terms across cultures.

The motivational orientation in metaphor theory is based primarily on the psychoanalytic view, and is characterized by very little empirical testing. As in the learning orientation, the psychoanalytic view stresses the experiential basis of metaphorical transference: the live metaphor recalls the past forgotten experience. This view holds that the unconscious mind motivates metaphorical expression. Experiences which the unconscious relates to past experience can stimulate the original feelings, without conscious awareness of the connection. The conscious mind represses the original memories as metaphorical expression allows some discharge of the affects. But even with metaphors consciously created (e.g. poetry) an unconscious level of meaning remains. Asch (Billow 1977, p. 89) gives a non-psychodynamic explanation as to the power of the cognitive-affective event of metaphor to impact affectively. He suggests that some of the feeling may result from surprise, and pleasure in paradox resolution. This might also be explained by the proposition (Billow, 1977) that the very content of metaphor (evocative ideas, images and feeling words) elicits an affective response in the receiver.

Billow concludes his review of the research with a consideration of developmental theory relating to metaphor. While younger children (8-10 years) were less likely than older children (13-14 years) to consider the multiple meanings of words, (Klorman and Chapman in Billow 1977, p. 89):

> children as young as a mean age of 3.5 years indicated a metaphoric capacity by being able to project "acceptable metaphors" (i.e. adjectives) on to various domains including color samples, tactilely perceived objects, and pictures of faces (Gardner in Billow, 1977, p. 90).

Pollio and Pollio (1974) found that third grade children could produce original metaphors spontaneously. Billow (1975), using Piaget-type tasks, found a strong relationship between operational thinking and metaphor comprehension. Although simple forms of metaphor comprehension were elicited from the youngest subjects (5 years old), their interpretations were virtually all made on a preoperational basis. Concrete and formal operational mechanisms allowed older subjects to comprehend more complex metaphors. Billow suggests that "classification tasks based on similarity among stimuli may be solved intuitively as well as operationally, although generally with less frequency." This would account for the success of the young subjects. Further, he argues that:

> Children's initial efforts at interpretation would support Piaget's observation (1969, pp.150-161), made long before the investigations of metaphor, that children have a nascent "figurative sense." The attempts at explanation and generalizing suggest as well that metalinguistic awareness also has its developmental precursors. (p. 91)

Billow concludes by postulating that the evidence that young children can, with regularity, produce and comprehend rudimentary forms of metaphor, would imply that linguistic errors are not the sole cause of precocious metaphor making. However, more research is needed in this area.

B. Metaphor in Learning

Ortony (1975) expresses a view of the pedagogic value of metaphor in terms of three theses: the compactness thesis, the inexpressibility thesis, and the vividness thesis. He argues that metaphor has been incorporated as a teaching device throughout the history of civilization, and that it is an essential component of communciation: thus of significant educational value. Ortony stresses the phenomenological tenet that what we, as conscious perceivers, experience is continuous. This continuity of experience is not merely in relation to temporal flow, but also in relation to memory. Experience does not arrive in discrete packets, he argues, nor do words have distinct, sharply delineated meanings. There is rather, a continuity for word meanings allowing for flexibility in application to the continuous and changing flow of experience:

> The continuity of experience, therefore, is not just a temporal continuity; it is, as it were, a continuity in "referential" space and it is the total continuity of experience which at once underlies and necessitates the use of metaphor in linguistic communication. (p. 46)

Ortony's compactness thesis is based on a "reconstructionist" view of language comprehension, which views language production as analytic, and language comprehension as synthetic. Language comprehension is closely connected to one's knowledge of the world. The reconstructionist view suggests that this knowledge is involved in the comprehension process through the formation of mental images. This is a process of filling in the details (synthesizing) between the linguistic components of oral or written language, and it enables language comprehension to occur without the necessity of providing numerous specific details. This process is called particularization: it is, in Ortony's words, "the language comprehender's digital-to-analog converter: it takes him nearer to the continuous mode of perceived experience" by distancing him from the "discrete mode of linguistic symbols" (p.48). Metaphor thus allows large chunks to be converted or transferred; it directs particularization. The compactness thesis is that metaphor allows for the predication of chunks of characteristics, thereby eliminating long lists of characteristics.

The inexpressibility thesis holds that metaphor facilitates the predication of otherwise unnameable characteristics. Metaphor is seen as an essential vehicle for expression in cases where it seems impossible to say what needs to be said in any other way.

The compactness theory and the inexpressibility theory focus on the mechanism employed by metaphor, explaining how metaphor functions. The vividness thesis describes the result of the view expressed thus far, and relates to the earlier distinction between the continuity of experience and the discreteness of symbol systems:

> Earlier it was suggested that language is a means of reconstructing experience, or experience-like representations; it was also suggested that the construction of a "mental image" might be taken as paradigmatic of success. Now, if our account of metaphor is right, then it would follow that metaphor lies much closer to perceived experience than a non-metaphorical equivalent. (p. 50)

This is a key point. Instead of reconstructing an analog representation from discrete items, metaphor transfers the whole band, enabling the communication of ideas with more richness of detail than would otherwise occur.

Ortony also suggests that the vividness thesis explains the strong emotive force of metaphors. Because metaphor is closer to perceived experience, the emotive as well as sensory and cognitive components are more available since they remain cohesive in the transferred chunk.

It is these features of metaphor which account for its usefulness in education. Ortony stresses that it is the "richness of detail in communicative potential" that provides an effective means of moving from what is familiar to what is less well known, or even unknown. He also suggests that vividness of metaphor is not only characteristic of visual aspects, but rather, extends to all sensory modalities and to emotive power. Thus, there is a twofold basis for the educational value of metaphor: the vivid imagery which results from metaphoric comprehension aids in remembering, and produces greater personal understanding, and metaphor is also an effective device for connecting what is well known with something that is new. Metaphor produces insight and comprehension.

Having considered metaphor in the psychological literature, and in terms of learning in the rather narrow sense of comprehending a linguistic message, a shift of perspective was undertaken to investigate the role of metaphor in learning in a vastly broader sense. The focus here was on the role of metaphorical thinking in learning and development as individuals, and as a species. The purpose here was to view metaphor in the context of the life of the individual and the life of the civilization, to determine if metaphor has significance beyond its communicative properties. For this part of the inquiry, a detailed study of Samples' treatment of metaphor in *The Metaphoric Mind* (1976) was undertaken to clarify how metaphor is connected to the learning process.

C. Metaphor and Cultural Evolution

Samples sees a parallel in the development of an individual, and the development of civilization. In the early years, the child perceives the world wholistically: time is cyclic, space is limitless. He argues that it is the process of acculturation which produces the specialization of the hemispheres into two minds. Language is the primary cultural influence. The child learns that the world that was once perceived wholistically, a private, metaphoric universe, cannot be communicated wholistically. It first must be separated and labelled, thus the child's world becomes one of many separate and discrete entities:

> The rational mind begins to form when the private mind goes public. Language is the primary medium of the public mind. Language is the

> first linearity in a world controlled by logic, order, sequence and independent structure .(p. 24)

It is important to note that the growth of the corpus callosum proceeds through developmental stages regardless of cultural influences. There is no research to indicate that culture *causes* the specialization in the brain. Samples' point is not primarily that in cultures which do not have a dominant compulsion toward linear, rational languages, there is apparently less differentiation of cerebral functions, although this would seem significant. Rather, he argues that our cultural bias nurtures the separation of the rational and metaphoric minds. While Albert Einstein considered the intuitive or metaphoric mind as a sacred gift, Samples suggests that our culture honors the rational mind, and views the metaphoric mind as somewhat subservient. He cites the work of Alexander Marshack (*The Roots of Civilization,* 1972), who was able to pinpoint the first known record of logical record keeping. He "decoded" scratch marks on a bone, created 2000 to 3000 years before the first hieroglyphic writing: Neanderthal man had made lunar charts. Logical thought was needed prior to the logical notation of natural systems or the logic of language, and Marshack traces the transition from storied thought, which was amorphous and cyclical, enriched by personal experience and rich in metaphor and images of nature, toward more linear thought. He suggests that initial verbalizations would not have been used as defined symbols, abstracted in meaning, but rather would have been only a part of a communication of meaning understood only within the experiential context. The non-verbal content of a warning cry, for example, would always have had a meaning more important than could be contained in words. Marshack views the word, like the development of tools, as an adjunct and product of the increasingly complex and widening potential of the human brain and culture. Words which initially were specific to a location or hunting group became increasingly generalized. He considers this transition in thought in relation to the perception of time. It can be perceived either as a cycle, or as a line. Cyclic time applies to nature: the seasons, days, and birth-death cycles belong to the rhythmic pulse of nature. Linear time, in contrast, is an abstraction: the arbitrary division of cycles into units invented by humans. Unfortunately, Samples suggests, "once the division is made, the units are often perceived as being more significant than the cycles" (p. 37). This is not to say that linear ways of thinking are good or bad, but they are related to our culturally approved mind strategies, and are part of environments that are clearly removed from nature:

> A day loses its connotation of a single earth spin and instead it becomes twenty-four hours. Just as the journey from conception to birth is a parade of all things that lived before us, so too is the acquisition of language a drama to the whole cultural evolution of Western civilization .(p. 40)

The metaphoric mind with its cyclical awareness dominated up to a point near 10,000 years ago. Then came the gradual transition to linearity. The contrasting worlds of cycle and line are reflected in the separation of function in the cerebral hemispheres. The logic and linearity of the Western mind, Samples argues, is nurtured by the sequential fragmentation of time and space in the left hemisphere, while the vivid acceptance of cyclical thought, more typical of Eastern thought, resides in the right.

Within this broader context, a consideration of Samples' view of the role of metaphor in the learning process was undertaken. He first began really thinking about metaphoric thought in relation to learning when he was invited to work with curriculum researchers at Harvard on a project to produce materials and strategies related to the whole child in the act of learning science. At that time, he was influenced by Jerome Bruner and his theory of right-handed and left-handed knowing. In presenting three groups of children, (7-8 years, 11-12 years, and 13-14 years) with materials and problems to solve, without adult intervention, they observed that the children always would literally "play" with the problem. He lists several important psychological insights from those participating in the project:

> Bruner: The students were involved in play, rich in "left-handed" knowing.
> David Hawkins: There were profound rational components being experienced tacitly by the children.
> Other adults: Teachers are generally made nervous by play.
> Samples: Adults (the cultural order) affect the kind of knowing children are permitted to experience. (p. 73)

Observations revealed that children quite naturally spent the early stages in a problem sequence in play. As they became saturated with the play they would shift to rational knowing. Teacher observers appeared noticeably more comfortable. The children rapidly became satiated with the rational discussions, and often with newfound data, would return to metaphoric play. They would continue back and forth, and anxiety was always observed in the teacher when they shifted to the left-handed mode. Gradually the rational knowing began to dominate, at which point it seemed increasingly difficult for them to return to metaphor. At this time it was also observed that the children became more serious, with fewer smiles and less body movement, as well as increased eye contact as they searched for visual cues and approval. The play stages seemed marked by high trust patterns, in contrast to the low trust patterns near the end. Factors which might explain this could include the notion that the children were reacting to the adult anxiety; that through their discussions they had reached consensus; that they had rationally solved the problem; that they were tired of the experience and decided to just "play the game"; and finally, the possibility that they actually preferred rational thought. Samples suggests that the observed tensions in the children makes this last one an unlikely possibility.

D. Metaphoric Modes

If children spontaneously engage in metaphoric modes of thought, and seem to enjoy this mode, what types of learning strategies does this suggest?

Samples has developed a typology of metaphoric modes, but makes no claims that they are quantitatively or objectively established. He prefers to view them as major areas of intellectual functioning. He also points out that unlike Piaget's hierarchies of intellectual development, the metaphoric modes of thought are not hierarchical. They are not dependent on chronological maturity, however, pressures from a rationally dominant culture often result in children losing the tendency to utilize some of these modes. In fact, it is often necessary to re-introduce adults to metaphoric modes of thinking. In the process of re-introduction, Samples does propose a hierarchy. It is a heirarchy of access, related to the ease with which the strategies are accepted by adults who function in our society. These modes will be presented in order of their acceptability to our rationally dominant culture. It is important to note that in the maturing child involvement in these modes is exhibited in almost the reverse order. Adults tend to think about problems in ways reflecting their earlier experience growing up in our culture. Rational skills are so highly developed that it is difficult *not* to use them when faced with a problem. In other words, cultural experience reprograms our thought patterns.

Children do not have this repertoire of skills and so approach each problem in a new way. Samples(1976) cites Oppenheimer's remark that "I could solve my most complex problems in physics if I had not given up the ways of thinking common to children at play" (p. 83) and De Bono's point that it takes an incredible amount of energy to struggle out of the habits or ruts formed by repeated experience (p. 83). The dilemma is that the very experience and maturity which provide us with useful thinking 'tools' also binds our thought processes. Children are able to invent, but do not conform, whereas adults have an abundance of cultural experience, but seem often to have lost their inventiveness. The goal, in Samples' view, is to bring these qualities into equilibrium. He presents the metaphoric modes in the sequence which he believes is most likely to reinstate inventiveness in adults.

Symbolic Metaphoric Mode

The first, and the least complex of the metaphoric modes is the Symbolic Metaphoric Mode. A symbolic metaphor occurs when an abstract or visual symbol substitutes for an object, process or condition. Abstract symbolic metaphors include alphabet letters, numbers, mathematical symbols and technical images. Visual symbolic metaphors may be logos, road signs, trademarks, map markings and so on. While both categories have visual components, the abstract mode is processed primarily in the left hemisphere, while the visual mode is associated with right hemisphere functions. In related research Norman Geshwind (Samples, 1976) found that in Japanese-speaking people, left-hemishpere strokes produced a loss of ability to read and write in the Katakana alphabet (abstract, symbolic) only. The ability to read and write in Kanji, the visual symbolic system, remained unaffected.

With the invention of writing, the symbolic mode provides the primary expression of the cultural order. Record keeping, law making and education have been facilitated throught this mode. While symbolic metaphors are often interchangeable, they have fewer meanings than the subsequent modes.

Being compatible with the communication formats in our culture, the symbolic metaphoric mode is the easiest for adults. It is not, on the other hand, an effective starting point with children.

Synergic-Comparative Mode

The synergic-comparative mode is probably closest to the generally understood concept of metaphor. This mode exists when two objects, processes or conditions are compared so that the two external components are connected in a way that adds to the meaning of both. Comparison is described ordinarily as a strategy of the rational mind, but in this context it is usually reductive. With metaphoric mode comparisons, in contrast, a synergic transformation occurs. That is, the parts of the system are united in a way such that their effect is greater than the sum of the parts. The process that occurs with synergic-comparative metaphors is one which extends the possibilities in thinking. Relationships are discovered in situations external to the mind itself. The person remains detached from what is being compared, and this externality is important in the difference between this mode, and the next: the integrative mode. Samples suggests that the synergic-comparative mode is relatively safe culturally: while researchers and other rational, objective people may be criticized for using metaphors, they generally use them in their speaking "while surgically removing them from their writing. However, it is also true that it is metaphoric thinking that often produces the creative insights that lead to great leaps forward in scientific thinking. Our language in all areas is rich in symbolic-comparative metaphors: "Volkswagen bugs," "body plumbing", "weeping willows," are only a few examples. Samples (1976) concludes that:

> The rational mind is all too aware that all knowlede is metaphor.

> Any idea, classification, or label that the human mind creates in the name of rationality or objectivity is anthromorphic....When the human mind returns to nature and pretends objectivity, it is no wonder that nature metaphorically smiles back. (p. 91)

Integrative Metaphoric Mode

The integrative metaphoric mode is described as occurring when people extend their physical and psychic attributes into direct experience with objects, processes and conditions outside of themselves. This involves a transcendence of mind and body, and re-entry into the mainstream of nature. Nontechnical cultures are characterized by having larger portions of their knowing connected to this metaphoric mode; they often approach nature with a mystical awareness. Samples suggests that the sensory awareness of children may be connected to this integrative, metaphoric mode. In fact, he postulates that children are deeply involved in this mode most of the time. In contrast to the aloof detachment of adults, children do not restrict their sensory involvement. Instead, they

> dive headlong into involvement. They immerse themselves in total sensory absorption of the issue. Touching, tasting, mimicking, moving dancing, and acting out the living and dying of whatever object, process, or condition they are confronted with is only natural. (p.93)

Reinstating this childlike total sensory involvement has contributed to many scientific discoveries. Research (Samples, 1976) now suggests, furthermore, that we may posess not five, but twenty or more senses. A related suggestion is that people who seem to possess the ability to detect changes in magnetic fields, or electrostatic currents in the air and the like, may not be deviant or mystical, but may have simply retained an awareness of senses posessed as children. The integrative mode increases awareness levels in a way that rational modes cannot. And while this in part is likely due to the greater involvement of the senses, it is also related to the tendency of the rational mind to get bogged down in definitions.

Inventive Metaphoric Mode

The inventive metaphoric mode represents an engagement of all of the formal and informal knowings of both hemispheres of the brain. In this mode the person "creates a new level of awareness of knowing as the result of self-initiated exploration of objects, processes or conditions"(p. 97). The mind engages in cyclic metaphoric thinking to see where linearities fit and the patterns of meaning that emerge. Total synergic knowing is involved in the functioning of the metaphoric mode. Samples (1976) conceives of the inventive mode as the natural mind.

> It is the peak human condition as it involves total participation in the whole of the natural scheme. It is the gift of three billion years and is not likely to remain suppressed in the face of lesser inventions .(p. 100)

In this chapter metaphor was considered in the context of learning and understanding. This began with a review of metaphor in the psychological literature; a relatively narrow focus, and moved on to view metaphor from what is almost the broadest possible perspective: the growth of civilization. The intent at this point was to bring this discussion to rest in what can be conceived of as perhaps a middle ground. A good way to do this is to focus on the developing, learning child as this learning occurs naturally, and as it can, or might best occur in a school setting.

E. Metaphoric Modes and Children's Learning

Movement in Samples' "hierarchy" of metaphoric modes may seem to be inverted in relation to Piaget's stages. The child at the sensorimotor stage seems to be totally involved in the process of invention; of inventing his perceptual universe, and so his experiences reflect the Inventive Metaphoric Mode. Yet, the infant does not have the Formal Operations capability of adults. In the loss, in adults, of the child's inventive attitude and the accompanying sensory skills, there has been what Samples (1976) calls a "tragic tradeoff that certainly Piaget never intended to happen" (p. 104). The intellect matures, he suggests, at the expense of sensorimotor skills. Our schools have adopted rituals of rationality, focusing on the 'cognitive' domain: the realm of thought, reason, and intellect. Emotions, feelings, values, and conceptions of self-worth belong to the 'affective' domain. Too often, the goal of achieving good feelings in school is related to succeeding on rational tasks.

Nature is the richest source of metaphor, but in our urban schools, children are divorced from nature. It is almost as though the educational setting is "out of context." Samples provides support for this perspective in his connection of the work of Piaget and Marshack. He describes Piaget's stages of intellectual development as metaphors for the way culture has emerged to dominate the species, and Marshack's observation that culture originated when humans shifted from cyclical, storied time to linear, sequential time. Marshack's description of the development of the species parallels what Piaget describes for individuals. In their movement from the Sensorimotor to Formal Operations stage, children trace the pattern of the evolution of human culture. This may seem like a tidy summation and lead to the question that if, perhaps, our emphasis on logical, rational thought is a measure of our sophistication as a species. But Samples (1976) suggests that we have lived the metaphors of both our biological and cultural heritage, and he proposes a tentative speculation on the origins of metaphor:

> As we encounter culture, we raise the ghosts of only the last ten to twenty thousand years of human existence. As we encounter nature we raise the winds of five billion years of natural existence. There is *more* of nature .(p. 113)

The implications for education are clear. There is simply far more to learning than being able to operate more fully in abstractions like reading, writing and arithmetic. Brain research (Samples, 1976, p.115) on retrieval of stored knowledge reveals that emotion stored with knowing comes first; thus all that we know is likely stored in two ways: in metaphor and logic. We have neglected the role of metaphoric knowing and the senses, and yet we now know that whenever learning occurs, all the sensory capacities operate at once. The right cerebral hemisphere processes cyclical time, access to natural metaphors, and sensory capabilities. Samples sees the metaphoric mind as a reservoir of motivation; motivation which has been repressed in our culture. He defines mental health as the full integration of the use of the rational mind with the metaphoric mind. People who have achieved this integration are characterized as possessing courage, humor and flexibility of integration between their minds. Conversely, neurosis is seen as a product of disequilibrium between mind modes.

The message for our culture and education is that we should nurture integration of the minds. To do this, Samples (1976) suggests that we must:

> Allow humans to be themselves and
> celebrate that selfness
> Love the metaphoric mind and respect the rational
> Nurture motivation
> Consider any attempt at communication appropriate
> Celebrate the whole person (p. 144)

We must begin to nurture all of the qualities of human potential: with acknowledgement, acceptance and celebration of the metaphoric mind, there would no longer be a distinction between rational and metaphoric minds. There would be only mind.

It would be an undertaking of immense proportions to consider all of the implications for education arising from Samples' vision. Nonetheless, it is important in psychology and education to remain open to broader conceptions that may not lend themselves to scientific validation. Gazing out over new territory does not always give sufficient information about what may exist beyond the familiar, but it certainly makes it difficult ever to see what is taken for granted in quite the same way. And it is possible to begin to change the way things are done, with positive impact, even in the absence of all the answers as to why the changes are effective.

F. Conclusion

This chapter was written in what Samples might call a Synergic-Comparative mode. It has extended the network of possibilities related to metaphor, and has focused on formulating relationships between metaphor and language, psychology and evolution. The purpose of Chapter V is to present a model of education that meets two very demanding criteria: 1) it honor, to a good extent, the metaphoric mind, and 2) it is functional. The purpose of including this chapter was to round out the thesis so that there was not a gap created by presenting a theory with educational implications, without any corresponding applications. Chapter VI then considers in greater detail the application of metaphor to therapy.

V. Practical Applications of Metaphorical Thinking to Formal Education

This chapter examines metaphor in a broad sense within the formal educational context, that is, schooling. This context is distinguished from, although certainly overlaps with, the lifelong learning and understanding which occurs in many contexts.

It may be that the logical conclusion based on the first five chapters of this thesis would entail abolishing or completely redesigning formal education. It is recognized, however, that there are always transition periods whenever there is change, and this thesis has been written in part with the aim of suggesting directions to enable that transition to begin, or to continue where it may already have begun. Thus, this chapter considers practical applications to the present educational setting.

A. Transpersonal Education

Transpersonal education is based on the premise that learning is a natural state for children, and when they are interested in what they are learning, the process is one of ease and delight (Hendricks and Fadiman, 1976, p. vii). Transpersonal education is education of whole human beings, with cognitive, social, emotional and spiritual potentials. Writers in this area recognize the two modes of consciousness associated with the left and right hemispheres, and aim for the concurrent development of the logical and analogical, the analytical and the intuitive. They view Freudian, behavioral, and humanistic psychologies as useful but incomplete psychologies (Roberts and Clark, 1975, p.3).

In transpersonal psychology, attention is turned to the inner world of human beings, discovering untapped resources:

> Many of the transpersonal techniques for using inner imagery in the process of self-discovery are well suited to classroom use, and may be easily introduced into the educational system. As the universal language of human experience, inner imagery finds expression in all forms of creativity, be it artistic, scientific or philosophical. As a student becomes familiar with his own inner resources, he develops a new awareness of his individual uniqueness and his relationship to others and the environment. (Roberts and Clark, 1975, p. 4)

Roberts and Clark (1975) suggest that the goal in applying transpersonal psychology to education is that both students and teachers assume responsibility for making choices and develop a sense of inner direction in their lives.

B. Classroom Applications

An important initial step in applying transpersonal psychology to education is learning to shift the focus from external to internal awareness. This can be experienced in a number of ways. Heightened concentration and focused attention occur spontaneously in individuals, but we can also train ourselves and others to consciously attain this state. The ability to move into an appropriate state of mind before undertaking a task is an important skill, but it is not one that is generally taught. The first step in this process is the introduction of relaxation training. Roberts and Clark (1975) cite research which suggests that relaxation can improve memory recall, and suggest that such findings exemplify two important principles:

> First, our behavior is influenced by *internal* states, and these states can be controlled voluntarily. Second, the mind and body are inextricably connected. When we control one, the other is inevitably affected (p.6)

These authors suggest that relaxation training in schools could be part of the physical education curriculum, as well as being taught as an aid to concentration. Related to relaxation training are the concepts of meditation and centering. A variety of different methods may be involved, the goal being to quiet the mind and get in touch with one's inner self. Hendricks and Wills (1975) define centering as having the intellect and intuition in harmony, leading to a greater sense of balance and responsiveness to the environment.

Another method of directing attention and facilitating concentration is guided fantasy. Fantasy trips can be designed specifically to teach content, or in an open-ended manner as an aid to creativity and self-discovery. The effectiveness of fantasy journeys may be related to neurophysiological findings that the left hemisphere thinks in words and clearly defined abstract symbols; calculating, reasoning and predominantly sequential and analytic in its functioning, while the right hemisphere is spatially oriented, thinking in pictures, perceiving patterns as a whole, and operating in an intuitive, emotional and receptive mode. Whether or not research will provide unequivocal proof that such sidedness accurately represents brain functioning, transpersonal psychologists suggest that Robert Ornstein's metaphorical use of "right function" and "left function" is important in terms of education, especially as he stresses that it is the integration of these two modes of consciousness, the complementary workings of the intutive and the intellect, which contribute to our greatest achievements (Roberts and Clark, 1975). Guided fantasy is viewed as a way of engaging the right half of the brain in the learning process, which has for so long emphasized verbal knowledge and reasoning. Much has been written about the value of experiential learning (Kolb, 1984), but not all that is taught can be directly experienced. Guided fantasy can provide imaginary experience which students can relate to the logical, verbal material that is read or presented in class:

> In this way, material geared to left brain learning can be connected to the more diffuse, intuitive knowing of the right side. Providing students with experiences to match the usual didactic instruction may also be a key to unlocking creative insight and intuitive understanding. Perhaps when something suddenly "makes sense" or "rings true", it is an instance of making a connection between the two modes of knowing. Becoming aware in the left side of the brain of what the right side had intuitively known but had not been able to verbalize may be experienced as a flash of insight. (Roberts and Clark, 1975, p.9)

With learning conceptualized in this way, there is a need to reconceptualize what it means to teach and be educated. If state of consciousness is considered an important variable of all behavior, then perhaps rather than continuing to change external stimuli given to students, more can be gained by teaching them to control their own states of consciousness. The mind/body connection is also regarded as central, given that mental and emotional states affect the body, and physical states affect mind and emotions.

Roberts and Clark (1975) view transpersonal education as a combination of rational-analytic and intuitive-synthetic modes of knowing. They point out that much educational thought has equated "thinking" with reasoning: the verbal, logical, analytic, linear processes of the left hemisphere. Right hemispheric intuitive thinking, in contrast, is creative, holistic, visual and pattern oriented: its strength being in seeing similarities and agreements among ideas rather than differences and conflicts. They suggest that intuitive perception often transcends or anticipates reason, and that:

> Philosophies of education which do not recognize the importance of

> developing right-brain hemisphere potentials are seriously underestimating the human capacity for learning .(p. 23)

C. The Metaphorical Way of Learning and Knowing

William Gordon and Tony Poze (1979) developed a program to enhance school learning called *Synectics,* which is based on the creation and use of metaphor. This program evolved from their tested theory (Gordon, 1961, p. 113) that simple connection-making is innate in kindergarten to third grade students (e.g. "a cow is like a horse with horns".) They assert that such associations function as a bridge that children construct between what they already know, and something new that they are trying to understand. Jacques Jimenez (1975) suggests that Piaget's research verifies two states of non-learning with which all educators are familiar: the state where what is presented is so familiar that students are bored and inattentive, and the state where that is presented is so remote and unconnected to anything in their experience that the students query "What's that got to do with anything?" A genuine learning situation according to Piaget, Jimenez (1975) argues, requires a vital tension between the familiar and the strange:

> The "trick" in learning is to see what one already knows in a brand new way, or to see a brand new thing in terms of what one already knows .(p.33)

The *Synectics* technique, then, is a way of thinking whose main feature is the making of analogies. Associative connections are considered a most powerful learning tool. Young children are encouraged to associate themselves with animals, objects or people by pretending to be them. This associative approach to learning is considered by its proponents to be the most natural basis for interdisciplinary education. All subjects become more relevant and students begin to develop an insight about the unification of knowledge.

It is also stressed that metaphor is not used as a simple teaching tool. Rather, children learn how to learn by developing (Samples might say reconnecting with) their own metaphorical process of understanding.

Gordon and Poze (1979) make another subtle but very important point:

> Unless young students learn in terms of intuitive, personalized insights, when they are presented with more advanced substantive material [in later years] they will feel abstracted from that material.(p. 82)

Thus, the metaphors or analogies are not intended to be exact parallels for the new learning. Instead, they should be "intuitive tools for developing an emotional, empathic understanding" (p. 84). Feeling cannot be divorced from the learning process. It is through conceiving of their own metaphors that students learn the habit of metaphorical knowing and learning - it becomes a way of developing what Gordon and Poze (1979) call "intellectual leverage" when presented with new situations. Metaphor thus becomes a personal tool which enables students to absorb and apply substantive knowledge.

There is a second important dimension. Metaphor, in this context, also helps students internalize the external world and express it in their own terms. The authors distinguish the associatory aspect of metaphorical process from the way the preconscious mind scans the unconscious in remembering. Remembering is described as a process of reducing strain and distance between the recalled and the unrecalled, while the metaphorical process introduces strain and distance between ideas. The unconscious is described as the repository of one's total experiences, intellectual and emotional. In trying to remember something, a person consciously activates the preconscious by giving it associatory cues. This, in turn, activates the unconscious which presents a variety of material to the conscious mind. This alternating flow from conscious to preconscious to unconscious and back again is scanned by a 'filter' which immediately recognizes the memory for which the conscious mind was searching. This reduces strain between what one wanted to remember and resistance to recall.

The associatory aspect of the metaphorical process differs from this in innovative situations. There is no exact answer being sought. One is searching for a new context for understanding. This new context is produced by introducing strain into one's thinking. Thus, although memory process is part of the creative process, its contribution is to the analytical element of creativity, rather than the synthetic element.

It is precisely the contribution of the metaphoric process to the synthetic element of thinking and problem solving that is addressed in Chapter VI, dealing with the use of metaphor in therapy. If metaphor is a powerful process in learning and understanding, and if it calls forth the potentials of all of the parts of the brain in an integrated way, then it is ideally suited to use in therapy. The goal in therapy, if not in life, is to strive towards maximizing potential and functioning in an integrated, balanced fashion, in other words, to gain wisdom. This is reminiscent of Samples' Inventive Metaphoric Mode. In reference to this synergic mode, Jonas Salk (1973) states:

> The artist draws largely upon that part of the mind that functions beneath consciousness...while the scientist by and large, but not exclusively, uses that part of the mind that functions in consciousness. The part of the mind that functions beneath consciousness also operates during consciousness; but it is necessary to learn how to draw more upon it and employ it for solving the problems of life, of survival, and of evolution. Wisdom arises from both parts of the mind (p. 86).

D. Conclusion

This chapter has considered the use of metaphor in the educational setting, and the next chapter focuses on the role of metaphor in psychology and therapy. Bob Samples (1976) has suggested that therapy has been called education done late, but argues strongly that "education cannot be called therapy done at the right time" (p.208). In the face of the increasing need for therapy in our culture, we must begin to acknowledge that something is wrong. Increasingly we sense the growing recognition among creative thinkers in our society that education must change; that we must reconnect with 'cyclical' and 'storied' time; that we must learn to celebrate our imagination and inventiveness, and celebrate that we are part of the natural universe.

Perhaps the time will come when therapy is no longer required, or at least is no longer separated from the mainstream of life. David Reynolds (1984, 1986) anticipates the process as he writes about the Japanese Morita therapy. Morita therapy is a character building process developed in Japan in the early twentieth century. Morita believed that neurotic suffering grows from misunderstanding about life, and the solution is re-education. The focus in his therapy is on noticing what is occurring, thereby pulling oneself out of mental wheel spinning and into reality. The client is called the student, and is taught to look at, to listen and to hear what is beautiful:

> Nothing in life is more beautiful than nature, and it should be the
> object of constant observation...(Reynolds, 1984, p. 89)

The details of this theory are not central to this discussion, but Reynolds' view of the direction of this therapy certainly has implications for the current dichotomy between therapy and education. He suggests that twenty-five years from now:

> the word "therapy" will no longer be used for Morita's ideas....
> Morita's ideas are practical and useful to everyone, not just to

> shinkeishitsu neurotics. So they will be applied more broadly outside the medical setting...the life education aspects of his method will be emphasized. Rather than "doctor" and "patient" we will be using words like "teacher" or "guide"....Our constructive lifeway must be learned by everyday action (1986, p. 109).

To understand how metaphor might provide a bridge or transition between education and therapy, a study of the role of metaphor in psychology and therapy was undertaken.

VI Metaphor In Psychology and Therapy

A. Metaphorical Communication: An Historical Perspective

Recent research in the neurosciences has provided an interesting new context for the discussion of metaphor in terms of hemispheric functioning. But metaphor, as a form of symbolic language, has been an essential feature of human communication throughout history. Stories and anecdotes have been used to teach and to convey specific messages in many fields. Biblical parables, Greek Mythology and the koans of Zen Buddhism along with the allegories of literature, poetic images and the tales of storytellers incorporate metaphor to convey ideas indirectly and often paradoxically. Herein lies some of the special power of metaphor to create and communicate meaning; that is, points made metaphorically are more interesting than simple injunctions, and making points indirectly reduces resistance.

If the line between education and therapy becomes blurred, the lines between religious or mythical messages, the resolution of fairy tales, and therapy are even more ethereal. If, following Strupp (Singer, 1974) psychotherapy is defined as essentially a technology to produce behavior change, and if this definition is expanded to include the humanistic orientations toward self-development and attainment of higher potentialities, it would still be difficult to differentiate these goals from those implied in Biblical or mythological teachings, or children's fables. The suggestion here is that metaphor has served therapeutic functions throughout history. Perhaps it is because, as some writers suggest , we have lost touch with nature, storied time and the metaphors handed down in various forms from preceding generations, that there is a movement to re-introduce metaphor, but now in a therapeutic context. The fragmentation of which Samples (1976) speaks has resulted, he argues, in a missing link which precludes our full psychological integration. Developing therapies to fill this gap seems a little like processing all the nutrients out of our food and then selling vitamins to everyone. But just as wholesale adoption of processed food was followed by a re-emphasis on natural whole foods, using metaphor to assist people to regain psychogical balance may be part of the transition back to psychological wholeness and connection with nature.

Before considering metaphor in the therapeutic context, it may be enlightening to look at ways in which metaphors may have served therapeutic functions long before psychotherapy was practiced widely. Karen Olness (1985) writes about 'Little People' (i.e. elves etc.), Images and Child Health. She suggests that there are common themes relating to stories of little people throughout the world, for example, the small outwitting the large, and the weak outwitting the strong. She wonders if perhaps children create these little people out of their perception of being overpowered or controlled by those larger and stronger. She quotes Thomas Keightly, who wrote in 1880:

> We have seen that all these legendary beings and their characters and acts are remnants of ancient religious systems, the mental offspring of deep-thinking sages...we find the same legends, modified by circumstances, springing up in distant countries and amongst tribes and nations who could hardly have had any communication. (p. 70)

She traces the history of little people in various cultures, and concludes that the history of little people is a history of imagery handed down through the generations. In every culture, present and past, imagination has been used as a tool for growth and creativity. Olness uses the examples of Einstein and Mozart to demonstrate the manner in which internal images have been externalized. She cites Bronowski's emphasis on image creation as the characteristic act of the mind of man, and Singer and Pope, who, in writing about the reluctance of researchers to study imagination or play until recently, state that psychology and other mental health professions "all but ignored the significant adaptive possibilities of the human gift of imagery" (p. 172). Olness (1985) discusses some of her own research which suggests that children may, at some point in development, become aware of relationships between images and body processes:

> the young child may be consciously aware that he can confront, challenge, and dispel images of fear through play. In controlled studies our research has documented the abilities of children to control voluntarily certain physiological processes previously believed to be autonomic. As children succeeded in accomplishing the desired control they often describe spontaneous images which they used to effect the changes. (Olness, 1985, p. 172)

Certainly more research is needed in this area, and may provide a clue as to *how* metaphor can function therapeutically.

As with legends and myths about little people, fairy tales too have been handed down in most societies, graphically describing the human condition. Bruno Bettelheim (1977), in *The Uses of Enchantment* , suggests that the function of fairy tales goes beyond entertainment. The stories start from the child's psychological and emotional being, and offer meaning on many different levels. In this way the fairy tale fosters personality development and enriches the lives of children. The polarizations that occur in these tales are characteristic of the thinking of the young child, and facilitate an understanding of the difference between two extremes. The stories are written such that the child identifies with the good person. Thus, Bettelheim would suggest, fairy tales subtly provide moral education by conveying the advantages of moral behavior through stories that the child can relate to. Bettelheim describes psychological maturity as gaining secure understanding of the meaning of one's life. More than any other type of story, Bettelheim believes, fairy tales can foster the child's understanding about the inner problems of humans and adaptive solutions.

Metaphor was considered in one more context prior to investigation of its use in the therapeutic setting. Mills and Crowley (1986) suggest that the philosophies of Eastern Masters metaphorically parallel child development. The process which the Eastern Masters teach as the way (Tao) to learn, grow and solve problems is one of interaction with nature and with life. This is precisely the way that the child gains information about the world and synthesizes it, over time, into a cohesive world view. Metaphor, in this context, has long been a primary vehicle for teaching. A logical, rational approach was viewed as a barrier to learning, and inappropriate for gaining understanding of concepts such as the unity of man, nature and the universe. Thus stories, parables and fables were used to assist students in discovering meaning metaphorically. The Zen koans are paradoxical riddles which cannot be understood by logic (e.g. Tell me the sound of one hand clapping). It is suggested by Mills and Crowley (1986) that the importance of the koan is derived from the fact that in solving the riddle, the student must transcend normal dualistic modes of thought. Once transcended, one experiences Enlightenment. Metaphor allows one to "remove the clutter that stands between enlightenment and our personal experience of it" (p. 9). Children, in Eastern philosophies, are considered to be natural posessors of Enlightenment. This line of thought is analogical to Samples' description of metaphoric modes. In the Eastern teachings, the child's pure and interactional experience of the world is enlightenment, and to achieve advancement, adults are encouraged to become more child-like by living in the moment and being connected to sensory experience. Kopp (1971) writes that the child:

> seems in a state of grace when it comes to matters of the spirit. Totally involved in living his life, he has neither time nor perspective in which to struggle with questions of identity or purpose, or meaning at all. (p. 89)

B. Metaphor in Psychology

Metaphoric thought has been discussed in widely varying contexts throughout this thesis, from neurophysiology to fairy tales. Metaphor also has a substantial history in Western Psychology. Mills and Crowley (1986) review some of this history beginning with Carl Jung, whose work is considered as a bridge between Ancient Eastern thought and modern psychology. Central to Jung's theory is the symbol, which implies more than what is given, and has a wider unconscious aspect. The crucial role of the symbol in Jung's theory was in its portrayal of the archetype. Mills and Crowley (1986) suggest that archetypes, those inherited elements of the human psyche reflecting common patterns of experience across the history of human consciousness, may be conceived of as "metaphorical prototypes representing the many milestones of man's evolution" (p. 13). Archetypes may be expressed in dreams, myths, fairytales and the like, functioning to present the unconscious mind with a point that is only fully understood on an unconscious level:

> The archetype expresses itself through metaphors (Jung uses the term parables) which transcend the comprehension of normal waking consciousness in a way similar to the Eastern koans. (p. 14)

The power in symbols derives from their ability to evoke emotional responses in us.

Sheldon Kopp, in his book *Guru: Metaphors from a Psychotherapist* (1971) considers the role of metaphor in the inner process of the therapist. Of the three modes of knowing he articulates, the rational, the empirical and the metaphorical, it is the metaphorical mode that is capable of expanding, even superseding the rational thinking processes and the empirical sensory processes.

> In this mode we do not depend primarily on thinking logically nor on checking our perceptions. Understanding the world metaphorically means we depend on an intuitive grasp of situations, in which we are open to the symbolic dimensions of experience, open to the multiple meanings that may all co-exist, giving extra shades of meaning to each other . (p.17)

The generative powers of metaphor contribute to a process of enrichment in the human mind. In this conception of metaphor as a natural generator of new patterns rests its powerful role in communication where new understanding is sought: this would include therapy, teaching and counselling.

Milton Erickson was a master in the use of therapeutic metaphor (Haley, 1973; Lankton and Lankton, 1983; Rosen, 1982; Zeig, 1982). Mills and Crowley (1986) point out that Erickson was atheoretical regarding just how and why his metaphors were so effective until he began collaborating with Ernest Rossi. Rossi's attempts to analyze the components of Erickson's metaphors came at the time when the hemispheric functioning theory was emerging.

At this point it is possible to draw together three major themes in this thesis: world image or "reality", discussed in Chapter I, hemispheric functioning theory in as described in Chapter III, and metaphor in therapy. Paul Watzlawick, in *The Language of Change* (1978) connects the themes of hemispheric asymmetry and the concept of world image. He argues against the widespread belief, in psychiatry, in an objective reality which determines the concepts of sanity and madness. He holds that this view is untenable: we cannot talk about reality itself, only of world images. Furthermore:

> The translation of the perceived reality, this synthesis of our experience of the world into an image, is most probably the function of the right hemisphere .(p. 46)

To facilitate change in a client, the therapist must first understand that client's world image, and then know how to practically achieve this change. Herein, Watzlawick asserts, lie important conclusions for the language and technique of therapy. Because world image is conceived and expressed in the right hemisphere, it follows, he suggests, that the language of therapy should be the language of the right hemisphere. Further, he argues for the inappropriateness of :

> A procedure which essentially consists in translating his anologic language into the digital language of explanation, argument, analysis, confrontation, interpretation and so forth (p. 47).

The type of therapy that Watzlawick advocates differs from other therapies in a significant manner. While psychodrama, Gestalt Therapy and psychosynthesis deal with the *expression* of elements from the inner world of the client, Watzlawick's focus is on using metaphorical language to go in the opposite direction: to go "into the right hemisphere in order to influence and change a world image that has never seriously been considered" (p. 57).

There is evidence in the research to support this theory relating to the language of the right hemisphere. Research indicates that in processing metaphorical communication, the right hemisphere is activated. Mills and Crowley (1986) cite Ornstein's finding that left hemispheric activity was recorded in reading and writing technical passages, while reading Sufi stories resulted in the highest right-hemispheric activity (accompanied by the same amount of left-hemispheric activity as in the reading of technical passages). The implication is that the left hemisphere processes the decoding of words, but the right hemisphere is required to generate meaning from the images and metaphors.

In addition to images and figurative language, symptoms are also believed to be expressions of the right hemisphere. Erickson and Rossi (1979) suggested that metaphoric language is a means of directly communicating with the right hemisphere, and thus shortens the time required for therapy.

Erickson was skilled in "two level communication." The conscious mind was occupied with one literal message, while therapeutic messages were seeded in the unconscious through indirect suggestion. Through the process in which metaphor activates patterns of unconscious association, old behavioral responses are interrupted as new meanings are generated and new behavioral patterns are produced (Mills and Crowley, 1986, p. 20).

Bandler and Grinder (1975) have explained the effectiveness of Erickson's use of metaphor from a linguistic framework. In their framework, the metaphor triggers what they call a "transderivational search," through which the client generates the meaning which is of the greatest significance to the present situtation. This theory is treated in detail in David Gordon's *Therapeutic Metaphors* (1978).

While conclusions related to the use of metaphorical communication may, as yet, be tentative, Mills and Crowley conclude, in Pelletier's (1978) words that:

> Initial research is confirming the intuitions of these theorists by parallelling the linguistic characteristics of metaphor with the physiological characteristics of right-brain functioning. Right brain

> functioning is imagistic, implicative, contextual and fluid; metaphor arises out of an interweaving of imagery and implication, the message of which can be gleaned only from a vantage point of context and shifting meanings. Indeed, metaphor appears to be *the* language of the right brain (p. 25).

Philip Barker (1985), in his discussions about the effectiveness of metaphors in communication, also emphasizes the neurological considerations. However, he considers this issue from a broader perspective as well, using stories as an example of metaphor. Stories, he suggests, are more interesting than expository statements. They can capture the imagination and contribute to new learning both through the sudden realization they may effect, and also in a more gradual process. Those hearing stories can interpret story content in personal ways, and extract meanings that are individually significant. In therapy, stories can be constructed to fit the client's situation, and to expand the choices of behavior or emotional responses available to that client. Barker asserts that the goal of therapy is not to provide specific injunctions, but rather , to help people to see things differently, and to feel differently about aspects of their experience. He also points out that stories can make points gently: they may have many levels of meaning, some of which may be veiled, thus they are less threatening than statements made directly. Direct statements may produce resistance in clients, but stories can be used by the client in any way and to any purpose. They may be heard at a literal level, nothing more, but it is also possible that deeper meanings may stimulate change at a less conscious level. Such change is less likely to be "rationalized away" than points made didactically.

Barker stresses too that the flexibility of stories makes them valuable vehicles for a wide variety of types of communication, including suggesting solutions, presenting opinions, conveying information, providing instructions or suggestions for action, as well as assisting the listener to gain new perspectives, as in reframing. Related to this flexibility is the possibility, with stories, of embedding messages directed to the listener in quotes within the story. The messages again, are thus less threatening and less likely to create resistance.

Further, as stories are something with which most adults and children are familiar, they are a valuable mode for building rapport. There is lightness and often an element of fun with stories, and with the establishing of a non-threatening relationship, metaphorical suggestions are even more likely to be accepted. A final and important point that Barker makes is that through the use of stories and anecdotes, a method of effective communication is modelled.

Having looked briefly at metaphor in the psychological literature, focus was then directed to metaphor in the more specific context of psychotherapy, and then, finally, in child therapy.

C. Metaphor in Psychotherapy

Most of the current literature on metaphor in therapy (Bandler and Grinder, 1982; Barker, 1985; Mills and Crowley , 1986; Gordon, 1978) is based on the work of Milton Erickson, and so it is important to begin this section by establishing some of the basic principles upon which Erickson's approach was based. Lankton and Lankton (1983) suggest that Erickson's greatness evolved in part from his belief that within each individual there is an incredible untapped potential. He tapped that potential in himself, in surmounting his own physical disabilities, and in his client's and students through paradox, therapeutic binds, anecdotes and hypnosis. His use of metaphor often occurred in a hypnotic context, but Erickson's definition of hypnosis was "concentrating on your own thoughts, values, memories and beliefs about life" (Lankton, S., and Lankton, C., 1983, xvii).

Expanding upon this defintion is beyond the scope of this thesis, however it is necessary to comment on Erickson's notion of the unconscious. Essentially, the unconscious was considered to be any process of which the personality is unaware, yet which is nonetheless a factor in determining conscious and bodily phenomena (Lankton and Lankton, 1983) Much unconscious experience is expressed nonverbally, and cannot always be expressed verbally:

> Most experiences defy the dominant hemisphere's attempt to verbalize all of their particular components. The manner of expression or the verbal capacity is limited to a linear and digital mode, in contrast to the global, comprehensive experience actually lived.(Lankton and Lankton, 1983, p.9)

Erickson believed that people always know more than they are aware of or can express, and for him, change involved initiating new responses to the environment.

While Erickson did not explicitly suggest a uniform theory of personality as a basis for his work, the Lankton's (1983, p.12) have identified eleven treatment principles, which, they suggest, constitute a theory of intervention:

1) *People operate out of their internal maps and not out of sensory experience.* This relates to Watzlawick's "world image" discussed earlier. Therapy may be directed to adjustments in the map, or to expanding the map.

2) *People make the best choice for themselves at any given moment.* Poor choices are viewed as the result of impoverished skills, and teaching new skills, and expanding the client's model of the world are held to facilitate better choices.

3) *The explanation, theory, or metaphor used to relate facts about a person is not the person.* This includes theories of both the client and the therapist. Explanations often serve to focus on how the client is stuck, and Erickson's emphasis was on using internal memory to retrieve resources as opposed to explanations.

4) *Respect all messages from the client.* The Lankton's refer to the many simultaneous messages during communication: the psychological level messages and the social level, the verbal and the nonverbal. The therapist must first notice these, and demonstrate respect for them in the way that they are utilized in subsequent information gathering.

5) *Teach choice; never attempt to take choice away.* This principle is derived from the second principle that people will make the best choices available. The intial focus in Erickson's therapy is not to change a person's thinking, but rather to go along with it and gradually create a situation in which the client will want to change his or her thinking. Rather than limiting choices or eliminating old behaviors, the goal is to teach new associations and choices.

6) *The resources the client needs lie within his or her own personal history.* Erickson believed that learnings, memories and resources were stored in the unconscious, and he used stories about childhood experiences, growth and learning to assist the client in retrieving personal meanings in stories and thus the resources that could be utilized in the process of change.

7) *Meet the client at his or her model of the world.* This is part of the process of building rapport. Erickson would often match the client's posture or way of speaking, and would accept his or her

definition of the problem; he would utilize all of the client's messages as he assisted him in retrieving and utilizing the appropriate resources.

8) *The person with the most flexibility or choice will be the controlling element in the system.* This principle could refer to the most flexible person in a family system, for example, but also refers to the therapist. The more flexible the therapist, the more clients he or she can build rapport with, and the wider the range of creative behaviors that can be generated.

9) *A person can't not communicate.* This principle is based on the notion that a client is always having internal responses which will manifest themselves in behavior. The behavior may be nonverbal, such as a change in the rate of breathing, facial expression, body movement and related ideomotor responses. Resistance is interpreted as important communication, a somewhat different interpretation from other therapies.

10) *If it's hard work, reduce it down.* This principle applies to both training and treatment. Erickson's approach can be learned and practiced in stages, and behavioral change in clients is often complex, and must be made one step at a time.

11) *Outcomes are determined at the psychological level.* In any communication, there may be several levels operating, but, the Lankton's suggest, the psychological message will be the determinant of the outcome, even though it is outside of awareness and is reflected in tone of voice, gesture or emphasis, rather than verbally. An important aspect of psychological level communication is critical in understanding the effectiveness of

metaphor and indirect suggestion in stimulating change in a client's experience, even though the client may be unable to verbalize how the change came about. The basis for this change in Erickson's approach is a "reassociation of the client's experiential life" (Lankton and Lankton, 1983, p. 26). This is in contrast to the notion of insight. Erickson believed that insight may be educational but could not change the past. Instead, he used metaphors to expand a client's choices:

> [He] frequently presented clients with models they could follow by means of metaphor....The Ericksonian approach uses metaphor and indirect suggestion to gain rapport, retrieve resources, and link these resources to previous stress signals or typical stimuli in the client's environment. And we do this at the psychological level rather than exclusively at the conscious level. The client finds that, for some unknown reason, when a situation is encountered that had previously been difficult, 'something' clicks, a new idea, feeling, or behavior comes to mind, rendering the situation less threatening, or even enjoyable (p. 27).

Barker (1985) points out that for therapies such as psychoanalysis and behavior therapy, the usefulness of metaphor is limited.

> Metaphor comes into its own, however, in those forms of treatment in which therapists play an active role in offering their clients ideas, instructions, solutions to consider, reframings or other inputs which may or may not be immediately acceptable. These include most strategic and systemic therapies, hypnotherapy, and other relationship therapies...those forms of treatment in which information (especially information that reframes situations) is exchanged between client and therapist in the context of a trusting relationship (p. 38).

He describes some of the clinical situations in which metaphor would be more effective than direct communication. He suggests that metaphor is useful with clients feeling overwhelmed by their problems. Stories focusing on overcoming obstacles may facilitate motivation. It is also useful in situations where a client seems unwilling to accept ideas that the therapist is suggesting, or when such ideas may be upsetting to the client, thereby threatening the client-therapist relationship. Metaphor may serve to maintain concentration, particularly with young children. Metaphors are also extremely useful in utilizing resources which the client may posess, but be unaware, and for providing a variety of choice at an unconscious level.

D. Types of Therapeutic Metaphors

Although various types of metaphors have been discussed throughout this thesis, it is necessary to focus on the varieties of metaphor that may be useful specifically in the therapeutic context. Barker (1985, p. 45) offers a typology along with an indication of the clinical situations in which each type might be most effective:

1) Major metaphorical stories - The planning and development of these metaphors is based on a thorough assessment of a complex clinical situation where there are major therapeutic goals. The story is designed to parallel the client's experience, and suggestions or solutions may be embedded in the story. Gordon (1978) and Lankton and Lankton (1983) provide specific strategies for designing and utilizing this type of therapeutic metaphor.

2) Anecdotes and short stories - Anecdotes are less elaborate than metaphorical stories and are suited for limited therapeutic aims such as making specific points.

3) Analogies, similies and other brief metaphorical statements - These types of metaphorical language are used in daily conversations to highlight certain points in a communication. They are used similarly in therapeutic

communication, especially where there may be resistance to accepting ideas presented directly.

4) Tasks with metaphorical meanings - Tasks are often given to clients, but not all tasks have metaphorical meanings. Those that do may have an element of ritual. Van der Hart (1983) outlines a variety of rituals and their usefulness, and Erickson was well known for prescribing ritualistic tasks (Hayley, 1973; Zeig, 1982).

5) Relationship metaphors - In this type of metaphor, one relationship serves as a metaphor for another. For example, a therapist's relationship with one family member can be a metaphor for that person's relationship with another family member. The therapist can model more effective communication.

6) Metaphorical objects - Metaphorical objects may be components of metaphorical tasks, or serve simply as symbols in themselves. They are a major component in children's play therapy, allowing children to work through their feelings through the metaphorical use of family figures, houses, animals and a variety of other toys.

7) Artistic metaphors - Barker (1985) suggests that artistic metaphors are most useful with children. They may involve painting, drawing, modelling with clay or play dough, building with blocks and other activities through which children may represent feelings or experiences. He also suggests that artistic metaphors are effective in reframing clients experiences in different sensory modalites, and thereby allowing them to view their experience from another perspective. This would seem to be an interesting way of assisting an adult client who perhaps is over - rationalizing a situation, to connect with nonverbal experience.

E. Conclusion

It would seem appropriate, before ending this discussion on metaphor in psychotherapy, to insert a word of caution. Barker (1985) advises that metaphorical communication is only appropriate when the therapist has a proper understanding of its use, as well as a clear therapeutic plan. While it has taken some time to lead up to the section on therapy with children, the author's belief is that it is necessary to fully understand the theoretical framework upon which therapy is based, to avoid using otherwise powerful techniques in a simplistic, ineffective and perhaps harmful manner.

VII The Application of Metaphor in Counselling and Therapy With Children

A. The Child Within

Mills and Crowley (1986) have devoted an entire volume to using metaphors with children, but what differentiates their approach from others , is their emphasis on the need for the therapist to contact his/her own child within (p. 27). While building an effective therapeutic relationship with children involves creating a safe environment for the development of rapport, respect and co-operation, it is this concept of contacting our inner child that these authors see as the most essential element. This is the element that allows therapists and parents alike to see the situation from the child's viewpoint, thus feeling greater empathy for what the child is experiencing, and, at the same time, accessing resources that had been learned as a child, but are now out of awareness.

Mills and Crowley (1986) discuss both Jung's and Erickson's conceptions of the child within, and note that:

> Jung's contact with his own inner child played a crucial part in releasing the extraordinary creative energies that culminated in his theory of the archetypes and the collective unconscious...For Jung child archetype was a living symbol of future potentialities that brings balance, unity and vitality to the conscious personality. Through the inner child, opposite qualities within the personality are synthesized and new possibilities are freed (p. 33).

These authors also note Erickson's respect for childhood qualities, as well as the mischevious and playful dimensions of his adult personality.

Erickson suggests that there is a wisdom in infancy not yet complicated by false learnings imposed by society and convention; and that sometimes adult problems can be solved by contacting the inner child (Rossi and Ryan, 1985). Thus, Mills and Crowley suggest that therapists can learn from the examples of Jung and Erickson, who both "sustained a nourishing and creatively rejuvenating contact with their own child within" (p. 36). The form that this contact takes will differ for each therapist, but will always provide a perspective that "adds an unequalled dimension of compassion and understanding to the child in therapy" (p. 36).

B. Fantasy and Imagination

An important dimension of childhood experience is fantasy. Recall that Pearce (1980) viewed fantasy as a genetic biological function essential for healthy development of the child. Mills and Crowley (1986) agree that fantasy is the natural process through which the child learns to make sense of the outer world: fantasy is the inner world. The child engages in symbolic or fantasy play creating metaphors as part of the learning process. Basing games or stories on what he is learning facilitates integration of new learning .

Historically, fantasy has not always been viewed in a positive light (Freud, 1962; Montessori, 1914), but Piaget (1951) noted the important role of fantasy in cognitive and sensory-motor development, as well as suggesting developmental phases in imaginitive play. Mills and Crowley (1986) point out that more recently researchers have found evidence for the function of fantasy in both compensatory and creative modalities:

> Children can use fantasy as a way of changing unpleasant situations or gratifying unmet needs, and they can also use it as a

> means of developing purely creative capacities. (p.38)

and furthermore, that the absence of fantasy may be pathological:

> Gardner and Olness (1981) speculate that our devaluation of fantasy in Western culture might contribute to the conflicts that emerge during adolescence (p. 38).

Erickson has differentiated between conscious fantasy, a form of wish fulfillment, and unconscious fantasies which he sees as communications from the unconscious mind about potentialities and what could be accomplished with the support of the conscious mind (Mills and Crowley 1986). The suggestion is that children have a natural ability to utilize objects or experiences in their environment to create their own experiences of self discovery.

Mills and Crowley (1986) cite research supporting the effective use of metaphors, fantasy and story telling with children to facilitate therapeutic change in a variety of applications including bedwetting, family therapy, hospital settings, learning, behavior and emotional problems, school phobias, self-concept enhancement, and sleep disorders, among others (Mills and Crowley, 1986).

There is also wide variety in the strategies and approaches utilized, including:

> eliciting the story from the child's own imagination (Bassin, Wolfe and Thier, 1983; Allan, 1978), or altering and retelling the elicited story as in Gardner's "Mutual Storytelling Technique" (Gardner, 1972,1974, 1975). Standardized stories (Rogers, 1983) utilizing preordained themes from folktales (Brink, 1982), animal lore (Brink, 1982), and science fiction settings (Elkins and Carter, 1981) have been used; and "personalized fairy tales" parallelling psychodynamic factors and utilizing the child's favored activities and objects were reported (Levine, 1980).
>
> (Mills and Crowley,1986, p. 41)

Some of these strategies are explored briefly to transmit some of the flavor of this type of therapeutic approach.

Richard DeMille

The discussion begins with approaches that have been utilized in settings not traditionally considered specifically therapeutic. Many authors have written about using fantasy and metaphor in school settings, or in the home, but the objectives and outcomes of the activities are unquestionably therapeutic in terms of the definitions given in Chapter VI, and in the broad sense of resources for living. Richard DeMille is a professor of psychology with a background that includes television directing and science-fantasy writing. He has written about imagination games for children (1976), and his major premise is that conscious and unconscious processes are as real as overt behavior, and that they can cause behavior changes. Further, he assumes that imagining can be as effective in changing behavior as any of the analytical thinking processes. DeMille describes a process in fantasy production somewhere between spontaneous and imposed fantasy. This is a directed daydream technique whereby key features of a visual fantasy are provided and the child fills in the details. Children sometimes feel that they do not have much control over what happens to them, and types of guided fantasy that DeMille devises are felt to increase the children's belief in their own effectiveness . DeMille proposes the view, similar to other writers discussed in this thesis, that there has been an overemphasis on teaching children by telling, giving facts and encouraging right answers only. With what we now know about thinking and problem solving, there should be more emphasis on developing productive and evaluative mental skills :

> Good judgment, originality, fluency and flexibility of thought, the

> ability to redefine situations or see their implications - such qualities are prized in human society. In everyday life they reap rewards.....in times of peril they may determine who will survive and who will not. (DeMille, 1976, p.6)

These qualities would seem also to define the essence of positive mental health. DeMille also makes an interesting point about fantasy: "Our grasp of reality improves as a function of the visibility of the spectrum of ontological probability...the more you know about what isn't, the more you know about what is" (p. 16). Thus his view that it is important to allow children full expression of fantasy before introducing the reality with which it is compared. He also discusses the function of imagination in reducing dependency on defense mechanisms, those mental tricks which prevent us from consciously thinking thoughts what would produce anxiety. He suggests that many people maintain more defense mechanisms than necessary, and that:

> Overdependence on defense mechanisms can result in constriction or even impoverishment of mental activity. Excess defensive switches protect us not just from uncomfortable thoughts, but also from thoughts that are merely unfamiliar (p. 21).

The way DeMille sees the purpose of imagination games or guided fantasy - a way of opening up closed territory - is similar to Erickson's, although coming from a different theoretical base. For Erickson, the client is retrieving resources, while for DeMille the client is learning to think about thoughts or events that may initially seem threatening, and that his imagination is more expansive, but safer, than he thought.

Deborah Rozman

Deborah Rozman has written a book, *Meditating with Children* (1975) which focuses on concentration and centering. The philosophy on which such a work is based, while seemingly ethereal, is reminiscent of the themes developed throughout this thesis of learning, brain functioning and therapeutic experience. The principles in Rozman's book are taught through both objective and subjective experiences so that the child "experiences unity between the inner activities of his consciousness and the so-called outer world of appearance and activity, and he can embark upon a study and integration of his total self"(p. 1). It is suggested that healthy attitudes towards life, human relationships, effective expression of feelings and resolving differences are primary goals of the program, and also further the evolutionary process. This echoes the theme of Jonas Salk in *Survival of the Wisest* (1973). The proposed result of the child's experiencing unity and balance between inner subjective and outer objective worlds, is an increased ability to cope, to understand and to express himself (p. 5). The children are educated to

> expand their awareness in terms of wholes, to identify and relate themselves through this unifying process to gradually reveal extended patterns of Being and expanded states of awareness beyond the logical, linear and time-bound patterns presently imposed on education...the various subjects are realized to be part of an integrated whole, rather than seen as separated, non-related specialized fields of knowledge. The child then, can come to terms with the whys and wherefores of what he is being taught in relationship with himself at the center and in context with his total life (p. 6).

Children are taught to utilize their imaginations for constructive purposes and positive behavior change. It is again difficult, if not impossible, to distinguish these goals from therapeutic goals. The only difference is that these programs are designed for use with all children, and in a sense may also be considered "preventive" in terms of fostering positive mental health.

Gay Hendricks and Russel Wills

There are many other similar programs designed for children in educational settings. Hendricks and Wills, in *The Centering Book* (1975), base their whole theory and series of activities on the belief that there must be concurrent development of the cognitive, rational and intellectual processes on the one hand, and the affective, intuitive and creative processes on the other. In fact, they argue that full development of one may depend on development of the other; the processes of feeling, fantasy, interaction and intuition are as important as intellectual processes.

> To be centered is to have the intellect and the intuition working in harmony. As we begin to integrate our bodies and minds, we feel balanced and more responsive to our environment...such a synthesis should be the ultimate aim of education. (p. 6)

Considered next was a program that may be described as being midway between the general approaches described above, and the more specifically therapeutic ones that follow.

Peace, Harmony , Awareness

Peace, Harmony ,Awareness (Lupin, 1977) is a program developed for use both in the classroom generally, and with small groups or individuals who are experiencing anger, tension, low self-confidence, behavior problems or learning difficulties. It has been used by teachers, counsellors and psychologists in private practice, as well as in mental health clinics and residential treatment centers. The aim of the program is to assist children in coping with everyday stresses, and in strengthening their self-concepts through fantasy stories. The fantasy experiences, in combination with positive self-talk, is proposed to increase the child's sense of self-control and reduce negative behavior, as well as enhancing personal relationships .

Relaxation is a fundamental component of the program, as stress is known to result in mental and physical tension, insecurity and frustration (Selye, 1974). Relaxation contributes to the development of self-control, and when children learn to control their bodies and behaviors, interactions with others improve, and there is a reduction in negative behaviors. Self-esteem, in turn, improves.

The combination of relaxation and visualization is felt to enhance memory and attention span, and also to increase "right hemispheric abilities and creativity" (Lupin, 1977). Visualization, imagery and fantasy encourage the involvement of right hemispheric functions. Jerome Singer notes that fantasy enriches the inner lives of children, and may play an important role in healthy development; in fact, "fantasies and daydreams ...may be the foundation of serenity and purpose in our lives" (Lupin, 1977).

It is helpful to consider programs such as these, designed to foster healthy development of all children, as a background for a discussion of metaphor in therapy. Such a background provides a context in which one can better understand why the therapy may be so effective.

Jerome Singer

The final section of this chapter focuses on two works which center directly on using metaphor and fantasy in therapy with children. As has been the previous pattern, the broader approach is considered before the more specific. Violet Oaklander, in *Windows to Our Children* (1978), provides a practical reference for a very wide variety of approaches in working metaphorically with children. She begins with a discussion of fantasy. Most of the methods she describes involve imagery and fantasy, which she sees as playing a central role in the growth and development of children. There is support for this view in the literature, and Jerome Singer in *The Child's World of Make Believe* (1973) considers this support in detail. There are some important points that should be noted, as they have implications for the therapeutic context. Singer cites Silvan Tompkins' cognitive-affective theory in which personality is seen as a manifestation of the interrelations of cognitive and affective subsystems. The significant emphasis in this theory is on how emotions are related to the rate and complexity of tasks involving information processing:

> The theory places emphasis on the role of memory feedback of affective responses and matching them with material from the long-term memory system and anticipatory images based not merely on expectations of events, but of their associated affects. Man is viewed in this system as an image-making creature constantly trying to organize his experiences into schemata or structures which can be effectively stored in a long-term memory system and which can be used to help in rapidly deciphering incoming stimulation so that the organism does not become overwhelmed by the mass of new material.
>
> (Singer, 1973, p. 188)

Singer (1973) provides a detailed treatment of the development of imagery in children. An important conclusion that he suggests, relating to make-believe play, is that through such play wherein the child practices a variety of roles, " a child gradually differentiates himself out of a field around him and sees many options within himself that are not automatically called for by the external situation" (p. 206). This is in contrast to the child less differentiated who will likely have "only a limited set of responses which he considers to be his 'true' self. The less differentiated self-concept may be a rather gross, somewhat malfunctional pattern of response in many situations" (p. 206). Make believe play is thus viewed as a component of cognitive skill development that is functional for the child in acquiring new patterns of behavior and other social learning. It allows the child to incorporate various elements from the culture into his repertoire of skills and behaviors, by turning what he observes into fantasy play.

Singer (1973) suggests that imaginitive play is not only of value to the younger child; children from 9 to 13 years of age also indicate considerable interest in make believe activities, but this is generally suppressed . He believes that make believe training for these children could help develop their cognitive capacities for thinking and planning, and also in developing empathy as a means of resolving conflicts and generating solutions. Studies by Michenbaum (1971) suggest that in some forms of emotional disturbance, control can be intitated through teaching self-verbalization. Singer (1973) argues further that:

> Make believe play games are one form of training the child for a variety of self-verbalizations, at first overt and later internal, which can help greatly in behavior control. Here the ...use of psychodynamic and make believe play with older children begins to be a bridge between the educational and psychotherapeutic enterprises (p. 249).

Make believe play can also serve another therapeutic function. Singer (1973) refers to Ekstein's suggestion that children may, in order to make some sense of their world, formulate distorted myths about the past, and therapeutic intervention may be aimed at assisting the patient to reconstruct a view of the past which may offer a more positive basis for living.

In summary, Singer (1973) sees make believe as a "special characteristic of normal development and a cognitive-affective skill available for the child's use" (p. 250) and he asserts that children who are lacking in imaginitive play will tend to remain at a more infantile play level as well as being restricted in their ability to engage in symbolic play and fantasy in the process of therapy.

> it would appear that the use of therapist modeling and the development of play skills would be most efficacious in providing the child with alternative opportunities for practicing a new kind of behavior and also for finding enjoyable means of dealing with periods of delay or distress...It would seem appropriate that we begin to think in terms of systematic attention to the meaning of fantasy skills for children as well as providing them with an additional resource in their desperate struggle to work out profound experiences of rejection, loneliness and confusions of identity (p. 254).

C. Therapeutic Metaphors

Violet Oaklander

Providing the type of systematic attention that Singer advocates seems to have been Oaklander's objective in *Windows to Our Children* (1978). She suggests that we can learn much about a child from observing his or her fantasy process because the child's life process will be reflected in the fantasy process. Her focus is more on the child's feelings than on behavior, because she believes feelings are the core. She maintains that only through tuning into the child's feelings can we know, understand and accept that child. Further, by reflecting children's feelings, they too will begin to know and accept them.

Oaklander suggests detailed activities involving drawing, working with clay, dough, water, wood and tools, using stories, poetry, puppetry and writing, as well as creative dramatics and play therapy. These activities cannot be treated in detail here. the focus is, rather, on the therapeutic aspects of these activities. Underlying the theory is Oaklander's belief that disturbance in children represents a "malfunction in the natural balance and flow of the total organism...and therapy [is] going back to locate and restore the misplaced function" (p. 56). She also theorizes that most disturbances involve impairment in the contact functions (looking, talking, touching, listening, moving, smelling and tasting). Misdirection of expression manifests in behavior symptoms. Children in difficulty tend to blame themselves, and as a manifestation of their drive to survive and protect themselves, some children withdraw. Oaklander sees the therapist's task as helping "the child separate herself from...outside evaluations and erroneous self-concepts, and help her to rediscover her own being" (p. 58). With the child's reconnection with the senses comes recognition, acceptance and expression of lost feelings. The next step is to learn both that one can make choices as well as verbalizing ideas, wants, and needs. Fundamental to this process is acceptance of and respect for the child, as well as a refraining from judgement and interpretation.

Oaklander suggests that when children make things, for example, with clay, that this provides a bridge between their senses and feelings, and it also provides an opportunity to link verbal and nonverbal expression. She believes that direct verbal statements made by the child are powerful in enhancing inner strength, and so will often ask the child to make a statement about what has been made. Her activities have strong sensory components, congruent with her view that it is through the sensory modalities that we "experience ourselves and make contact with the world" (p. 109).

Oaklander's utilization of imagery follows from the theory explicated by Singer (1973), and she further suggests that fantasy and imagery experiences enhance the child's intuitive sense and allows the individual to "make contact with the inner wisdom" (p. 120). She also uses meditation as a way of bringing one back to the self, or centering. She stresses the interrelationship between body movement and learning, citing the developmental lag in motor abilities that often accompanies learning disabilities.

An understanding of Oaklander's theoretical base leads into a discussion of her therapy process. It is important to note that there is a Gestalt dimension to her therapy in terms of the notion of polarities, the splits one experiences within, and in others in his or her life. Oaklander's fundamental belief in this context is that:

> An integration, reconciliation, or synthesis of one's opposing sides, positive and negative, is a prerequisite to a dynamic and healthy life process (p. 159).

Thus, most of Oaklander's techniques encourage projection, but she uses this term more broadly than in the sense of a defense mechanism. She points out that both artistic and scientific creativity depend on projection. Based on our own experiences, projection reveals much about our sense of self. What the child expresses

> can display her own fantasies, anxieties, fears, avoidances, frustrations, attitudes, patterns manipulations, impulses, resistances, resentments, guilts, wishes, wants, needs and feelings (p. 193).

Oaklander cautions that this is important material, and projection often may be the only way that this material may be revealed. It must be handled carefully.

Her primary objective is to initiate in the child a process of self-awareness and self-ownership. For Oaklander,

> Therapy is an art; unless one can combine skill and knowledge and experience with an inner, intuitive, creative flowing sense, probably not too much will happen ...one must truly like and appreciate children in order to work with them (p. 194).

Perhaps this comes with the connection with the child within, discussed earlier in this chapter. An interesting perception she suggests is that for young children it is often sufficient, in therapy, to release or bring out the blocked feelings interfering with the growth process: it is not always necessary for them to verbalize their insights or awarenesses. The therapist is a catalyst for the child's evolving process, assisting in the release of feelings that allow the child to become more integrated, responsible and happy, and to relate in a more positive manner with others.

But there is more to the therapy than simply facilitating expressive projections. Once these have been expressed, Oaklander then, through having children accept the perhaps newly discovered parts of themselves, guides them back to reality. This is not an easy process, but it is necessary in order that the child can feel a stronger sense of "self-identity, responsibility and self-support" (p. 196). The process, then, is one of moving from the child's symbolic expressions and fantasy to reality and the life experiences.

A few examples, relating to specific problem behaviors, provide greater insight into this therapeutic approach. Significantly, Oaklander does not view behavior problems as sickness, but rather as "the child's evidence of strength and survival" (p. 205). For example, she views aggressive behavior not so much as expression of anger, as a manifestation of real feelings which have been deflected. Underlying the aggressive acts, in addition to the anger, may be feelings of hurt, rejection, insecurity, anxiety, often "a diffused sense of selfhood...a very low opinion of the self he knows" (p. 207). In working with the child, rather than focusing on the aggressive behavior, Oaklander's approach would be to engage the child in a nonthreatening activity, building trust, and allowing the feelings to emerge through the activities. Once the feelings begin to emerge, she would then move to more directed activities.

Related to aggressive behavior is the expression of anger. Oaklander suggests that children learn early that their expression of anger is not acceptable and so they suppress it. The power of their own angry feelings can be frightening to children. She suggests four phases in working with children's anger. The intitial phase involves providing opportunities for expressing their angry feelings. They can express these safely metaphorically, through activities such as writing, drawing, or role playing with toy people or puppets. The child is then assisted in moving towards the actual feeling of anger they are experiencing. The therapist then facilitates the child's experience of being verbally direct to the appropriate person about his or her angry feelings. The final phase involves talking with the child about the anger, how it is triggered, expressed and its impact on behavior. As the child becomes more conscious of the anger ,he or she no longer fears it , and can begin to feel more strong and whole (p. 211).

In her therapeutic approach, Oaklander utilizes a very broad range of activities which allow the child initially to express feelings metaphorically. Metaphoric activities are also utilized to generate solutions, a process which would seem to depend upon the Ericksonian notion of retrieval of resources, although Oaklander herself does not use this terminology. She does, however, respect the inner wisdom of the child and refers to the "knowing self that knows the answers to questions involving the dynamics of life" (p. 121).

Other Approaches in the Literature

In the therapeutic approach of Mills and Crowley (1986), artistic metaphors are utilized, but it is the metaphor in story form that they have developed most comprehensively in their theory. They discuss several approaches to metaphor creation. Brinks (1982) used stories based on European-American or Native-American folktales in a family therapy context to provide insights and suggestions indirectly. Elkins and Carter (1981) based their imagery on science fiction adventures, wherein the child, through imaginary space travel, would encounter events and characters which would provide resolution for personal problems.

Levine (1980) treated childhood insomnia with hypnotic suggestions presented through audio cassette recordings of childhood fairy tales. These fairy tales were personalized by incorporating the child's favorite objects and characters into the story and the fantasy characters model successful adaptation to the child's own manifestation of psychological stress.

The next two techniques described are those most similar to the approach Mills and Crowley (1986) have developed. Gardner's (1971) Mutual Storytelling Technique involves having the child first make up a story to which the therapist listens to detect psychodynamic meaning. The therapist then utilizes the child's characters and story line, but inserts healthier options than the ones suggested by the child.

Robertson and Barford (1970) developed stories for therapeutic use with a chronically ill six year old child. They transposed the actual problem situation, the child's perspective as well as the medical goals, into a story telling format. Mills and Crowley (1986) indicate their important departure from this approach. They found that:

> parallelling the situation with less closely related metaphors is more effective because it facilitates dissociation from the problem area, which in turn enhances the client's ability to respond without the interference of conscious mental sets (Erickson and Rossi, 1979). This also brings the *story process* rather than its *content* into focus (p. 43).

Joyce Mills and Richard Crowley

Central to the approach of Mills and Crowley (1986) is the Ericksonian notion of incorporating the patients symptoms into the therapeutic strategy. This approach differs from other approaches to symptomatology. When symptoms are seen as manifestations of a traumatic past experience, then a return to the cause cognitively, analytically (as in psychoanalysis), or emotionally (as in Primal, Bioenergetic, or Reichian Therapy) is considered central to resolving the difficulty. Symptoms have also been considered to be the result of faulty past and present learning. The original cause is not pertinent to behavior modification, cognitive restructuring or repatterning techniques. In the psychoneurophysiological approach to symptomatology, the focus is on genetic, biochemical and environmental factors, and treatment is often biochemical in nature. The utilization approach wherein symptoms are incorporated into the therapy is based on the view that symptoms are a gift or message from the unconscious. Erickson believed that it was important to utilize the symptom before looking at underlying causes. Utilizing the presenting symptom means, according to Mills and Crowley (1986) that:

> all approaches are pertinent, depending on the unique elements in each clinical situation. One patient might require a strongly cognitive intervention; another a strongly cathartic experience; still another a straight forword behavior modification technique. It is the patient's needs and symptomatology that determine the type of intervention and the *ambience of utilization* that guides the specific application (p. 45).

Further, they suggest that the "philosophy and technique of utilization form the cornerstone of effective and respectful therapy with children" . Symptoms or behaviors are messages, the validity and integrity of which are respected by the therapist. They are utilized nonjudgementally. The therapist observes, participates in and reframes what is presented, (p. 48), utilizing the life experiences of the child to present new ideas designed to elicit normal behavior.

As with Oaklander (1978), symptoms are not regarded as manifestations of pathology, but instead result from blocked resources. Every child posesses natural abilities and potentials, but misperceptions of experiences around family, friendship or school problems can block or distort the child's feelings and actions. When children do not have full access to his natural resources, "*limited solutions* - symptoms" result.

Herein lies a concept which is central to this thesis. In this approach, symptoms are interpreted as:

> symbolic or metaphorical communication from the unconscious which is not only signalling distress within the system *but is also providing a graphic and utilizable depiction of that distress.* The symptom is the medium and the message (Mills and Crowley, 1986, p. 50).

Since symptoms are held to contain a metaphorical message about the problem, the therapist's task is to create metaphors which contain an appropriate solution. In Ericksonian terms, the therapist first accepts the child's symptom, then enters into his or her reality, and finally presents a therapeutic alteration of that reality (Rossi and Ryan, 1985, pp. 169-170).

While it is important for each therapist to develop their own congruence between philosophy and technique, a basic framework for the use of therapeutic metaphors is provided by several authors (Barker, 1985; Gordon, 1978; Lankton and Lankton, 1983; Mills and Crowley, 1986). Mills and Crowley differentiate between literary and therapeutic metaphors. Both involve correspondence between the metaphor and what it is describing, but while literary metaphors describe, the intent of therapeutic metaphors is to create change through reinterpretation or reframing. For this to occur:

> the therapeutic metaphor must evoke both the imagistic familiarity of the literary metaphor and a *relational familiarity* based on a sense of personal experience. The story...must speak to the common life experience of those listening...in language that is familiar (p. 64).

A metaphor cannot be therapeutic if it does not "touch the listener in a personally relevant way." This is the first of several important elements of therapeutic metaphors identified by Mills and Crowley (1986). They use the term "shared phenomenological reality" to refer to the process in which the child experiences the world created by the therapist's metaphor. The child creates a bridge or personal connection between a life experience and the story experience, which allows for an integration of elements from that story into his or her own life. This is the element upon which rests the tremendous power of metaphor to elicit change. A second element of therapeutic metaphor is added once identification between the child and the story has occurred. This is the process of providing for the child a sense of shared experience about the problem, in place of a sense of isolation about it. Mills and Crowley (1986) suggest that the connection between the child's problem and the metaphorical problem allows for retrieval of resources and abilities through approaching the problem indirectly, so that the process is "not quite" conscious.

Metaphors can be designed to create a shared phenomenological reality utilizing elements found in traditional fairy tales. Generally they:

1) Establish an overall theme of *metaphorical conflict* in relation to the protagonist;
2) Personify *unconscious processes* in the form of heroes or helpers (representing the protagonists abilities and resources), and villains or obstructions (representing the protagonists fears and negative beliefs);

3) Personify *parallel learning situations* in which the protagonist was successful;
4) Present a *metaphorical crisis* within a context of inevitable resolution, by which the protagonist overcomes or resolves his problem;
5) Develop a new sense of *identification* for the protagonist as a result of his victorious "heroe's journey".
6) Culminate with a *celebration* in which the protagonist's special worth is acknowledged (Mills and Crowley, 1986, p. 65).

Not every metaphor will contain all of the elements, nor must metaphors be completely original; they may be stories drawn from real life experience. The creative therapist draws from all past knowledge and experience and, cognizant of the uniqueness of each child's experiences, fashions a metaphor that the therapist perceives will work well for that particular child, in that particular situation.

In creating therapeutic metaphors, Mills and Crowley (1986) stress the importance of utilizing whatever personally positive experiences are available to the child (hobbies, cartoon characters, animals, etc.). These provide an important link to the child's inner resources. These authors also emphasize the powerful source of information provided to the therapist by the child's minimal behavioral responses, both verbal and nonverbal. They suggest that from birth children communicate feelings and needs through spontaneously emerging minimal cues. These might include changes in facial coloring, tone of voice, breathing patterns or eye blinking, and:

> Learning to recognize and respond to minimal cues is one of the most powerful therapeutic tools available because it provides a window to the child's personal experience (Mills and Crowley, 1986, p. 92).

Mills and Crowley (1986) also advocate the recognition and utilization of sensory preferences. The sensory systems are fundamental to early learning.

Each child develops his or her own unique preferences in terms of sensory functioning in relation to given experiences. That is, a child may rely on one sensory system more than the others in certain situations, and this results in particular sensory strategies for processing the same experience such as reading or listening to music. If a preference becomes a rigid, fixed mode of responding, limiting the child's choices and range of experiences, it is considered a sensory imbalance. This can create difficulties in cognitive or motor performance, and subsequently to emotional or behavioral problems. The focus for therapy is not so much on sensory imbalance as a source of problems for children, but rather on its impact on the way in which a child deals with the presenting problem. Mills and Crowley (1986) note that:

> the way in which children's sensory systems function in relation to the presenting problem *and* in relation to positive areas of their life will serve as both a critical diagnostic tool and as a valuable resource in solving the problem (p. 103).

Sensory integration becomes a focus for emotional and behavior problems. Intervention on a sensory level, it is argued, can "alter the entire psychodynamic constellation...[and] will invariably re-order the dynamics in a positive direction" Mills and Crowley, 1986, p. 103). This is very much like the therapeutic process described by Oaklander (1978). An awareness of the sensory preferences of the child, then, is viewed as an entry point to the child's inner world. Through establishing experiences of "sensory synchronicity" the therapist can facilitate the child's access via metaphors based on the personal, psychodynamic qualities of the child, and valuable inner resources (Mills and Crowley, 1986, p. 103).

Mills and Crowley (1986) utilize an aspect of the Neurolinguistic Programming model, wherein the sensory language used by a person is considered to be a representation of the internal neurological process that person is utilizing in communication. Predicates (verbs, adverbs and adjectives) reflect one of three main sensory experiences: visual, auditory and kinesthetic (Bandler and Grinder, 1975). The system one relies on most heavily is held to be the conscious communciation system, and utilizing that system would make the metaphor more effective because of the familiarity for the child. This is certainly an area where more research is required, but the related concept of an "out of conscious" sensory system has implications for therapy. The theory is that an out of conscious sensory system can interfere with positive processes of change. An example might be a person who, while preparing for a job interview, keeps telling saying, without awareness, that he or she won't get the job. If, in therapy, the system creating the problem experience is outside of consciousness, it is impossible for the person to choose or control the nature of those experiences. The notion of an out of consciousness sensory system is central to the use of therapeutic metaphor. Mills and Crowley (1986) cite Heller and Steele (1986):

> resources can be identified and bridged to the problem area. Metaphor...is the primary vehicle of this type of change because its message is communicated indirectly. Through metaphor, the out-of-conscious sensory system is opened up and activated in relation to the problem. (p. 121)

Children may tune out their sensory systems so that a type of "mental block" is created. The child then loses access to some of his or her natural resources. With a blocked auditory system, a child may be unaware of negative, internal dialogue. A blocked kinesthetic system, where the child is out of touch with his or her feelings, may produce psychogenic symptoms such as headaches and stomachaches which are related to anxieties, although the child is unaware of this connection. A blocked visual system leaves the child unaware of negative internal pictures; past negative mental pictures may be projected onto all similar situations, producing discomfort and anxiety. There are a variety of strategies for determining which sensory system (or systems) are out of consciousness (Bandler and Grinder, 1975; Mills and Crowley, 1986).

To round out this discussion of therapeutic metaphor, consideration is given to Mills and Crowley's (1986) model of *three -level communication.* Erickson's two-level communication involved interspersing suggestions to the unconscious mind while the conscious mind attended to the story details. Mills and Crowley have added to this a third level which they call a process of sensory interweaving:

> In presenting a therapeutic metaphor to the child, the *storyline* communicates the first (conscious) level of meaning; the *interspersed suggestions* communicate the second (unconscious level) of meaning; and a process of *sensory interweaving* communicates a third, out of conscious level of meaning. (p. 138)

Sensory interweaving is purported to "bring interaction and balance to the child's overall sensory functioning" as well as opening access to the out of conscious sensory system. This results in "process confluence" where all systems are functioning together and the child is in balance (p. 141).

With the addition of the third level of communication, we can expand the framework for constructing a therapeutic metaphor as described by Mills and Crowley (l986, p.143). The first step involves interweaving the conscious, unconscious and out of conscious sensory communication systems through the particular language that is used in introducing the story (*tell, hear, watch, imagine, as you sit).* Next is the evocation of unconscious resources, and setting the stage for metaphorical conflict. The unconscious processes are all personified and past learnings are reiterated as a basis for change. Parallel learning situations are personified providing indirect suggestions for therapeutic change. A metaphorical crisis may then be structured with inevitable resolution. A secondary level of awareness is then structured through a heroe's journey or celebration.

In addition to stories, living metaphors are also utilized in this process. A child may be given a task to do. At the first level, the task is consciously communicated to the child. The second level of communication is unconscious; the child's problem is matched in structuring the task. The third level is also unconscious; sensory integration is the goal as elements of the task serve to open a blocked system (e.g. the nailbiting child who is given the task of nurturing ten little plants) (Mills and Crowley, 1986).

This chapter concludes with a brief description of artistic metaphor, as, in a sense, it provides a holistic, simultaneous depiction of the many strands woven into this thesis. Oaklander's (1978) therapy involving artistic metaphors has been discussed, and the particular activities may be common to a variety of therapeutic approaches. Mills and Crowley (1986), in this writer's view, have done the most comprehensive job of of integrating these activities into a theoretical framework.

The power of both storytelling and artistic metaphors, they assert, is in their ability to integrate both left and right hemispheric functions

> on conscious and unconscious levels via multisensory approaches. Because the artistic metaphor involves the use of objects in space it is both multisensory *and* three dimensional. This helps to...expand the metaphorical message into tangible, physical terms. It has ...given an external expression to the internal realm of feeling and sensation...opened another door through which the unconscious mind can express and resolve the child's problem by way of conscious representation. (p. 161)

Underlying art therapy is the belief that when given the opportunity to express feelings, children can naturally resolve important issues.

Mills and Crowley (1986) argue for the advantages of artistic metaphor on the basis of the right brain's previously discussed role in "mediating imagistic, emotional and kinesthetic processes" (p. 164). In the process of utilizing artistic metaphor, the imagistic aspect resides in the conceptualization of what is to be created. The emotional aspects relate to the connection with feelings, both pleasant and unpleasant which impact on the artistic expression; the kinesthetic components are the physical dimensions of creating the art. An additional point that they stress is that the materials utilized in artistic metaphor are generally familiar items and activities with which children have had positive experiences:

> This helps to buffer the metaphorical message within an environment of receptive familiarity, which in turn helps to release a rich field of symbols, background structures, and themes that can aid the therapist in generating future storytelling metaphors .(p. 164)

The approach to artistic metaphors differs from art therapy in that with art therapy generally there is not a broad range of therapeutic goals addressed. In the case of artistic metaphor, the value is viewed in terms of what Mills and Crowley (1986) call its "living benefits" which include:

> the ongoing experience of releasing pent up feelings *as well as* the simultaneous activation of inner resources and strengths. From a metaphorical viewpoint, the most salient function of artwork is to depict the child's problem *and* unconscious solutions *as they exist in the present moment* (p. 166).

This is consistent with the other uses of metaphor that have been discussed.

D. Conclusion

Steven and Carol Lankton, in *The Answer Within* (1983) provide a detailed treatment of the use of metaphor in hypnotherapy including theoretical, diagnostic and cognitive frameworks. There are specific models for constructing metaphors, and case studies utilizing metaphor in the contexts of pain, obesity, acute hysterical anxiety and self-image thinking, although not specifically with children. David Gordon, in *Therapeutic Metaphors* (1978) details the construction and utilization of metaphors from a Neurolinguistic Programming perspective. Philip Barker, in *Using Metaphor in Psychotherapy* (1985), provides a good reference for understanding the use of metaphor in therapy, as well as establishing treatment goals. Specific use of metaphors are discussed in relation to developmental problems, conduct disorders and behavioral problems, emotional problems, family problems, and to the wider social context. *My Voice Will Go With You* (Rosen, 1982) provides a selection of some of Milton Erickson's teaching tales with their embedded metaphors.

The literature in relation to therapeutic metaphor is certainly beginning to grow. As yet there is relatively little in relation to therapy with children. In order to explore metaphor in this context, it has been necessary to take a somewhat circuitous route, beginning with what we know about brain functioning and child development, and what is being theorized about metaphor in thinking and learning generally. This was then juxtaposed and integrated with some of the existing theory of metaphor in psychology and psychotherapy. The outcome was to indicate a broad theoretical base of support for the use of metaphor with children.

At this point, it would seem wise to note Barker's (1985) caution. He advises that therapeutic metaphorical methods should not be regarded as a panacea, and should not be used without careful assessment of the client.

They should be utilized in support of therapeutic objectives, and are not to be considered as a separate therapeutic modality. Rather, these approaches may be viewed as techniques that may be incorporated into various therapeutic methodologies.

VIII Summary, Discussion and Recommendations

A. Summary

The purpose of this study was to investigate, in the literature, the basis for and application of metaphor in education and therapy with children. The task was inherently difficult, as the literature on this specific topic is relatively sparse. However, there has been an abundance of research on brain functioning and child development, and much theorizing about children's thinking and learning. Metaphor also has a rich history both in literature and in psychology. The task in this thesis was to draw from a variety of diverse strands in such a way that a meaningful statement could be made about what is effective in facilitating the healthy, positive development of children, both in educational and therapeutic settings.

Metaphor was defined broadly as an implied comparison between two different things, and was expanded to include various representations of experience through connection making, and the use of stories and dramatic and artistic media. The suggestion was made that this type of investigation did not lend itself to a strictly scientific approach, and theories of consciousness and change were presented. The argument was put forth that notions of consciousness are not static, but rather are fluid and dynamic, changing as our awareness of ourselves and our civilization expands both through research and through our collective inner explorations. The theory of change considered in this thesis was presented as part of the suggestion that sometimes for real learning to occur, it is necessary to step outside of conventional ways of approaching problems.

With this in mind, theories of mind and development were investigated, however attention was not directed towards traditional theorists in this area. Instead, thinkers from areas outside of psychology and education *per se* were studied, including Jonas Salk, Bob Samples and Joseph Chilton Pearce. These writers have come from diverse disciplinary backgrounds, and thus brought a very broad, interdisciplinary perspective to the research. Theorists such as Piaget were nonetheless well represented, as the above writers, in discussing learning and development demonstrate both by direct comments and in their theorizing, a great respect for the work done by the earlier theorists.

What has been added to the traditional learning theories is information which has only recently come to light regarding the functioning of the brain. While much of the work done in this area, particularly regarding hemispheric functioning, is as yet inconclusive, there is enough general agreement to permit some theorizing. It was stated at the outset that for the purposes of this study, hemisphericity theory would serve as a *model.* Research indicates that the two cerebral hemispheres seem to function differentially, with the left hemisphere more involved in logical, linear, sequential and analytical thinking, while the right hemisphere is associated more with visual, spatial, analogical and simultaneous processing. Many writers have suggested that it is important to develop the competencies of both halves of the brain, but that our society and educational system have over-emphasized "left-brain" thinking. Right hemispheric capacities have not been generally valued in our schools as much as those of the left, and this may have more serious consequences than what was initially thought. Initial thinking was that these capacities "atrophied," and efforts could be directed to strengthening them. Current research goes even further, suggesting that development of right hemispheric capabilities is *crucial* to full intellectual development. It is of course recognized that the brain always functions as an integrated unit, but there are certain types of activities which engage the right hemisphere *as well as* the left.

From a developmental standpoint, the research points to a gradual change in development and functioning of the brain on a neurological level, accompanied by observable, measureable changes in the capabilities and processes of the child on a functional level. An interactive view of development is supported, with brain development allowing the possibility of new activities which thus stimulate further neurological development. It appears that the development of one growth period depends on the degree of development which occurred in the previous growth period. There is strong evidence supporting the view that younger children depend on right hemispheric processing for adaptation to the environment, and that with the gradual development of the left hemisphere, dynamic integration occurs.

Metaphor was considered against this background of differential hemispheric processing. Metaphoric knowing is held to engage the whole brain, and hence is seen as having integrative properties. Right brain knowing is seen as fundamental and prior knowing, both in terms of human development, and in the development of culture and civilization. There was considerable support in the literature for the view that it is through the right brain that synthesis of the information brought in through the left brain occurs, and metaphor is believed to facilitate this process. While metaphor has a history of usefulness in learning and therapeutic situations, the current model of brain functioning provides an additional strong rationale for its effectiveness.

Once this rationale was fully developed within the thesis, an exploration of applications both within educational and therapeutic situations was undertaken. There is wide variety in resources available in terms of educational applications, however, writing in the areas of utilization of metaphor in therapy specifically with children is only just beginning to grow, and as yet research in the area is virtually non-existent.

B. Theoretical Significance

The theories of Pearce and Samples, upon which much of this study was based, are more expansive than those of the traditional theorists. Their perspective is much broader, as they both view the development of children within the context of the growth of civilization. Their theories *include* much of what is known and accepted about child development, but *go beyond*, with the inclusion of information based on the results of current research in the area of brain functioning, and the incorporation of philosophical thinking.

While in one sense it may seem inappropriate to judge such theories by the same critierion that we judge theories developed from traditional scientific methods, there is also the sense that if the theories have any usefulness or validity at all, then they should be well able to withstand the scrutiny to which other theories are subject. With this in mind, the standards suggested by Thomas (1985) were applied to the theories of Pearce and Samples. The works were considered together as they were perceived to be both similar and complementary.

The holistic nature of these theories accounts for some of their fundamental appeal, however it also accounts for some of the weakness in terms of "good theory." A theory is considered to be economical in the sense that it is based on as few unproven assumptions as possible, and if phenomena can be explained by simple mechanisms. A theory is also considered better if it is falsifiable or disconfirmable. There are clearly unproven assumptions, for example, the notion of a holographic universe with the brain as a hologram fragment, and some of the conclusions about hemispheric functioning. It must be recognized though, that the intent of the writers was to move beyond the interpretation of development and behavior in terms of simple mechanisms, and to communicate the perhaps unrecognized *complexity* of human development. Further, in the area of brain functioning, and the unfolding of our civilization in time, we may need to admit of the possibility that we may never be able to confirm or disconfirm certain dimensions with any certainty.

With the exception of the aforementioned standards, the theories would appear to be strong. They do seem to reflect the facts of the real world of children, and are clearly understandable. They would appear to be practical in the sense of explaining and predicting behavior, for example, the explanations of why so many young children develop "learning problems" when they are expected to perform very abstract, logical tasks which are inappropriate given their developmental levels in terms of brain functioning. The theories are strong in terms of internal consistency, and consequently yield a wealth of practical guidance in relation to parenting and teaching.

The greatest strengths of these theories, in this writers view, are the elements of self-satisfaction in terms of the explanations of development, and the stimulation of new research techniques and the discovery of new knowledge. These writers have opened up a vast new perspective; the territory is the same, but the point of view is infinitely broader than what has been the case with traditional theorists. This movement is happening in all areas of scientific endeavor, and is likely a measure of our continuing evolution as a thinking species.

C. Implications and Recommendations

Several implications can be drawn from this study. Perhaps one of the most important is related to educational practices during the early years of formal schooling. Overwhelmingly, in our schools, there is a very strong emphasis on logical, analytical processes which are abstract and often unrelated to the real world of the child. This is evident in the form of phonics worksheets and other fill-in-the-blank activities that children spend literally hours of each day completing. Research has suggested that too great an emphasis on such tasks, or the (too) early presentation of such tasks to young children can in fact be harmful. If it is true that intelligence develops out of the child's full and complete interactions with the world, then, at the very least, we have been depriving generations of youngsters of the time and the opportunity to do just that. If five hours of each day are spent in school, sitting quietly in a desk, attending to abstract tasks, and a significant portion of out of school time is spent seated in front of a television set, the impact on the development of intelligence could be dramatic. In the above scenario, opportunities for the development of language, the vehicle that makes it possible for humans to conceptualize and express what they think, is severely limited.

The recommendation following from this line of thinking is that there should be an emphasis in schools to re-create, as closely as possible, the natural learning experiences of children. While some writers suggest that children should not even be concerned with formal education until 8 or perhaps 10 years of age , it is recognized that in our culture this is not likely to be the general rule in the near future. Although it should be noted that in the growing literature on home schooling, the pattern seems generally to be one of much smaller portions of the day being spent on abstract learning tasks, and much more of the time devoted to wholistic learning, where the child is involved in real tasks such as planning, planting and cultivating a garden, or learning functional skills. Advocates of home schooling report happy, well adjusted and socially more mature youngsters, and research in this area would be most interesting.

Related to the provision of "natural" learning experiences is the emotional component of learning. Current educational practices may create stress and tension in youngsters, which is not conducive to learning. Further, the literature shows that information presented in formats involving stories, visualizations and metaphors is integrated much more readily. Learning in schools should not be regarded to the extent that it is, as "serious business," particularly in the early grades.

A related implication is that since some children (and adults) show a preference for right brain processing, a greater variety of teaching modes should be utilized on a daily basis to accommodate the various learning styles, and that provisions should be made for those children who show an unusually strong preference for this processing mode.

There are also implications that can be drawn from the theorizing about the metaphoric mode. The metaphoric mode, it has been suggested, is as important as rational and empirical modes. Metaphoric understanding means depending on an intuitive grasp of situations, being open to symbolic dimensions and multiple meanings which may co-exist together. This mode is seen as being a very natural one for children, and an important aspect of problem solving and enlightened scientific thinking. As such, it would seem to be important to foster this kind of thinking, not only in children, but in learners of all ages.

With the support which was evidenced for the utilization of metaphor in therapy with children, this is an area which should begin to receive more attention. The implications here cannot be drawn as strongly, as the techniques are fairly easy to learn, while the understanding of what is being attempted is considerably more complex. The use of therapeutic metaphorical techniques should undoubtedly be reserved for those trained and qualified to do therapy with children.

The implications considered here cover a fairly broad spectrum. It is for this reason that a final recommendation is presented. Within the educational setting there is, even at the elementary school level, considerable specialization of the personnel who work with children. There has not, historically, even been significant overlap of the many curriculum areas. It is not common to find many teachers in any given school, who are conversant with recent developments in the understanding of child development. Further, there is naturally a lag between new knowledge relating to development, and curriculum change. As advocates for the children, school counsellors will need to be aware of current findings relating to development and learning and be prepared to intervene when children seem to be at risk due to a mismatch between developmental need and teaching content or methodologies. They must be prepared to facilitate with teachers and parents, so that the best learning environment possible may be provided for the child. If it is true that what children become is a function of what they have had an *opportunity* to experience, then if a child is not thriving, our task must be to broaden his or her experiences in such a way that growth is as natural as possible.

D. Suggestions for Further Research

An underlying theme in the thesis has been that the development of imagery and metaphor in children's thinking is an important aspect of child development. Further research is needed to determine how it is related to play patterns, language development, creativity and adult achievements. A related area of study would be to investigate how images change as children develop into adults. Research is needed to determine if the development and encouragement of imagery in childhood impact on the thinking or learning style that evolves, or if the ability to produce and utilize imagery is dependent on the thinking style of a particular child. If the relationship is reciprocal, research could be directed to determining how the development of imaginitive capabilities and thinking style could be developed and expanded through particular types of activities.

If the development of creative imagery is a crucial component of child development, what is the effect when the child's brain is flooded with imagery from outside itself, as with television? If the average American child sees six thousand hours of television before starting kindergarten at age five (Pearce, 1985, p. 74), this becomes potentially a very significant factor influencing brain development from a functional perspective. What differences are there in cognitive style, creativity, ability to imagine, and social and emotional adaptability between children who watch a lot of television and those who watch little or none?

More research is still needed in the area of hemisphericity theory and learning style. Are there fixed patterns in children, or do they change developmentally, or vary with the task? Are there large areas of thinking and functioning neglected by our schools? A study comparing the relative amount of time spent on abstract thinking tasks as opposed to experiential activities in the primary grades might be revealing, as would research into the proportion of school activities in which children are interactive as opposed to passive recipients.

The time has probably come when we should let the children speak, while we listen. Perhaps they do have inner wisdom, and a phenomenological study could focus on how they like to learn, what they want to do with their time, and what they really think and feel about schools.

In terms of the utilization of metaphor in therapy, research is needed to determine its effectiveness. Does change occur more quickly, and is it more lasting than with other approaches? To what extent do children generalize from the therapeutic metaphor to actual life situations?

Theodore Barber (in Olness, 1985) stated that "what the twentieth century will finally be remembered for is how we explained imagination" (p. 169). If this is true, there is much research to be done in this area in the next decade.

E. Conclusion

Bob Samples (1976) has referred to therapy as education done late. But as he has countered, "Education cannot be called therapy done at the right time" (p. 208). The need for therapy does suggest, he argues, that something is wrong.

The growing need in our schools for consultants and specialists in areas such as behavior disorders, learning disabilities, writing individual educational plans, and the numbers of students referred to school counsellors for misbehavior, low self-esteem, lack of motivation, poor attendance, poor work habits, poor self-concept, aggressive behavior, disrespect and so on also suggests that something is wrong. What is wrong is what seems to be a process of dis-integration: within the individual and within the culture. Samples quotes Paul Tillich's comment that, "Only when humans decide are they fully human " and envisions

> the whole mind in the process of decision - the mind of culture and the mind of nature...the mind of rationality and the mind of metaphor (p. 208).

Still, we must deal with the dis-integration. Kopp(1971) suggests that always the many have depended on the few for guidance, and that the

> psychotherapist is the contemporary Western agent who helps others in the midst of struggles or those who are unhappy about failing to find satisfactory resolutions to common human crises. (p. 7)

and the spiritual guide or guru is

> a special sort of teacher [who] appears to introduce his disciples to new experiences...to greater truths. Perhaps, in reality, he gives them the freedom that comes with accepting their imperfect, finite human situation. (p. 7)

The best helpers, in Kopp's view, act as agents for positive growth, change and personal development. The best helpers are also charismatic, that is, they possess the gift of grace , from the Greek *Graces,* meaning to bring "joy, brilliance and beauty into the lives of men" (p. 9).

Herein lies the best definition of the parent, teacher, counsellor or therapist, in relation to the wonderful gifts that are the world's children; one who helps them in their struggles, introduces them to new experiences and greater truths, gives them the freedom of self-acceptance, and brings joy, brilliance and beauty into their lives. Our children represent our future, and reflect our past ; we must give them no less.

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